In tribute to
Rolf Hachmann

STONE VESSELS AT KĀMID EL-LŌZ, LEBANON: EGYPTIAN, EGYPTIANIZING, OR NON-EGYPTIAN?

A Question at Sites from the Sudan to Iraq to the Greek Mainland

by Christine Lilyquist

1 REVIEW OF THE PROBLEMS

In June 1989, the question posed in the title of this paper was presented to the author in reference to fifteen stone vessels of 'Egyptian' type found in the 'Schatzhaus' at Kāmid el-Lōz during 1978. These vases are part of a phenomenon that exists throughout the ancient world, and this paper will discuss the means available to answer the question posed, and then review the Kāmid el-Lōz vessels as a representative corpus.

Stone vessels are among the countless objects that were manufactured in ancient Egypt by anonymous craftsmen. Their sizes, shapes, and functions vary, and their characterization as products of Egyptian craftsmen rests on examples excavated in Egypt, examples with Egyptian inscriptions, and representations within Egyptian tombs and temples. For few Egyptian eras, however, are there modern, systematic, well-illustrated stone-vessel typologies. And the possibilities that an unusual vase (or even vase type) excavated in Egypt today could have been made abroad or be the product of a foreign craftsman living in ancient Egypt are rarely considered - despite contemporary evidence of interchange between Egypt and her neighbors in the period under review, ca. 1650-1400 B.C.

The problem of identifying craftsmen is compounded for so-called 'Egyptian' vases or vases made of 'Egyptian' stone found outside Egypt. Archaeologists working in the Sudan, the Levant, Anatolia, Cyprus, the Aegean, or even Mesopotamia may consider vessels - commonly fragmentary - 'Egyptian', but they rarely have the chance to discuss their finds with an experienced archaeologist or curator whose specialty is Egypt. In contexts without local written records, these luxury objects have become indices of trade, cultural influences, and chronology.[1] For, in the presence of what is thought to be a diagnostic type from a major culture, the possibility of local creation, style, manufacture, or stone is often ignored.[2] Indeed, Mesopotamia - which has historical data and available stone sources[3] - could be an area of influence, at least on the Levant and Cyprus, but it is rarely considered.

Egyptian archaeologists on their side have only rarely turned their attention to 'Egyptian' objects found outside Egypt. The young J.D.S. Pendlebury listed many items in the Aegean he thought were Egyptian.[4] More seasoned archaeologists advanced cautionary opinions, however. G.A. Reisner agreed with A. Evans's assessment that eleven vessel fragments at Knossos were of Egyptian hard stone and shape[5] but noted that - with the advance of stone vessel studies - the range and variations of Egyptian types were more extensive than Evans thought. As a matter of principle, Reisner stated that people with similar needs and materials can produce similar objects, this being the situation at Ur, in his opinion, where C.L. Woolley found so-called alabaster vessels.[6] The latter vessels were not seen by Reisner either, but A. Lucas thought, on the basis of visual examination in the British Museum, that the stone of the Ur vessels was not Egyptian in origin.[7]

1 Warren 1989 and 1991b; Gitin and Dothan 1987; Cline 1991; Phillips 1991b; see chapter 5,2-3 generally. Cline's basis for categorizing objects as local or impored is not defined (Cline 1991: 3); Phillips uses Warren's stone identifications.

2 An exception to this phenomenon has been offered by D. Oates, who referred to vessels excavated in northeastern Syria as „handled alabaster jars, in some of which the material appears superficially to be of Egyptian origin" (Oates 1987: 187).

3 T.F. Potts 1989.

4 Pendlebury 1930a and probably 1930b after „two years' studentship in Greece and a season's excavation in Egypt."

5 On the basis of Evans 1921 and 1928.

6 For pottery shapes of the Akkadian period at Ur, see K. Karstens, Typologische Untersuchungen an Gefäßen aus altakkadischen Gräbern des Königsfriedhofes in Ur. Ein Beitrag zur modernen archäologischen Methodik (Münchener Universitäts-Schriften, Phil. Fakultät 12; Münchener Vorderasiatische Studien 3), Berlin 1987.

7 Reisner 1931.

8 Petrie 1931: § 40; referring to juglets, bags, shoulder jars, ovoid flasks, he termed them „usually of Egyptian alabaster, but many ... of Syrian work;" see also Petrie 1952: § 49. His discussion of nos. 557-59 (Petrie 1937: 9,21) would have led I. Ben-Dor to err. Two of Petrie's examples are dated closer to Dynasty 18 than 12 in their excavation reports, and the third seems to be a shoulder vase.

W.M.F. Petrie, in Palestine after forty years work in Egypt, suggested that many stone vessels found at Ajjūl had been locally made, although 'usually of Egyptian alabaster,'[8] without discussing whether that type of rock occurred outside Egypt (see below). F.v. Bissing doubted the 'Egyptian' stone or workmanship of certain vessels from Assur[9] and W. Ward has more recently doubted the Egyptian origin of a number of objects found in the Aegean and Levant,[10] including stone vessels at the Amman Airport.[11] Other archaeologists have had questions too. When describing 'alabaster' vessels collected in Cyprus, J.L. Myres wrote, „it is ... impossible to distinguish with certainty Egyptian imports from Cypriote imitations."[12] C. Schaeffer termed the amphoriskos Plate 25,3 'of Syrian manufacture,' and referred to other vases at Ras Shamra as local because of the quality of the stone.[13] A. Rowe referred to a porphyritic jar at Beth Shan as „a nice breccia bowl, somewhat resembling Predynastic Egyptian bowls of the same material."[14] And C.L. Woolley wrote as follows regarding 'alabaster' vessels found in second-millennium Alalakh:

> „As can be seen, the majority are more or less of the standard forms which are familiar in Egypt and are regularly termed Egyptian; it would perhaps be wiser to avoid the implications of that term and to regard them as the product of the Middle East *koinê*, that partial but real uniformity of culture which, thanks to international trade, derived from and extended over Egypt, Syria, the Aegean, and Mesopotamia. In any case it would be wrong to conclude from the shapes that the vases were necessarily imported."[15]

More recently W. Culican thought there wasn't enough evidence to determine whether certain Assur vessels - as well as jars from Almuñécar (Granada) - „were contemporary with the pharaohs they name, or were antiques faked by Phoenicians;"[16] and P.R.S. Moorey has discounted most of the cases of 'Egyptian influence' in Near Eastern vessels.[17]

But these opinions are not part of standard consideration when stone vessels of Egyptian type are found outside Egypt.[18] Although a range of recent studies explore center and periphery in the second[19] and first millennium B.C.[20] as

9 Bissing 1940: nos. 5, 12-31, 33-34, 38; cf. 149 n. 1, 179-81.

10 Ward believed that stoneworking evolved independently in Crete, Anatolia, and Cyprus (Ward 1963: 32, 39) but did not necessarily differentiate between the date of a single item and the time range of its type (Ward 1963: 29, 'Dynasty 3' vases can extend at least to Dynasty V according to Reisner 1931: 203f.) or material in Egypt (Ward 1963: 17, see the 'Chephren diorite' sphinx of Senwosret III [Hayes 1953: fig. 119] and a Middle Kingdom toilet vessel from Lisht [Lilyquist 1995, Introduction]) and possibly elsewhere (Montet 1928: no. 614; Lilyquist 1995, no. 4). For a discussion of Byblos and Ebla objects, see Lilyquist 1993: 38-47.

11 Ward referred to the vessels as „Palestinian imitations of Egyptian stone vessels" (Ward 1964: 47).

12 Myres 1914: 275.

13 C.F.-A. Schaeffer, Les fouilles de Ras Shamra-Ugarit, septième campagne (printemps, 1935), Rapport sommaire, in: Syria 17, 1936, 140; C.F.-A. Schaeffer, Les fouilles de Ras Shamra-Ugarit, neuvième campagne (printemps 1937), Rapport sommaire, in: Syria 19, 1938, 246; C.F.-A. Schaeffer, Ugaritica. Études relatives aux découvertes de Ras Shamra, Première serie (Mission de Ras Shamra 3), Paris 1939, 31f. pl. 7.

14 Rowe 1940: pl. 52A, 6.

15 Woolley 1955: 272.

16 Culican 1970: 31.

17 Moorey 1994: 45f., 52f.

18 L. Åström 1972, Jacobsson 1987, 1989: 218-220, and 1994, and Peltenburg 1986 recognize the problem.

19 A. Caubet and A. Kaczmarczyk, Bronze Age Faience from Ras Shamra (Ugarit), in: Early Vitreous Materials, eds. M. Bimson and I.C. Freestone (British Museum Occasional Paper 56), London 1987, 45-56; S. Mazzoni, M. Verità, and L. Lazzarini, Faience in Ebla during Middle Bronze Age II, in: Early Vitreous Materials, eds. M. Bimson and I.C. Freestone (British Museum Occasional Paper 56), London 1987, 63-77; E.S. Sherratt and J.H. Crouwel, Mycenaean Pottery from Cilicia in Oxford, in: Oxford Journal of Archaeology 6, 1987, 325-52; C.R. Higginbotham, The Egyptianization of Ramesside Palestine, in: Abstracts of Papers for the Annual Meeting of the American Research Center in Egypt, April 23-25, 1993, Baltimore Md., 37.

20 Archaeological Institute of America, ed., Greek Presence or Greek Presents? The meaning of pre-Hellenistic Greek imports in the Levant, Colloquium scheduled for the Annual Meeting, December 27-30, 1994, Atlanta, Ga.; I. Winter, Perspective on the 'Local Style' of Hasanlu IVB. A Study in Receptivity, in: Mountains and Lowlands. Essays in the Archaeology of Greater Mesopotamia, Malibu 1977,371-86; cf. V. Wilson, The Iconography of Bes with Particular Reference to the Cypriot Evidence, in: Levant 7, 1975, 90.

well as in other time periods[21] and cultural spheres,[22] stone vessels have not been among the objects analyzed. The subject should be especially important to those interested in trade and chronology. (Note however, that the technique of using specialized items for chronological studies has been queried.)[23]

This paper does not attempt to discuss when or how Egyptian vases and raw stones found their way abroad, but asks, are those vases and stones indeed Egyptian? In Egypt the period under review covers Dynasties 15/17 (Second Intermediate period) through Tuthmosis IV (almost two-thirds the way through Dynasty 18). This period precedes the Amarna age when diplomatic correspondence documents contact between Egypt, Babylonia, Assyria, Mittani, Arzawa, Alašia, Hatti, and Syria-Palestine. In the period under review, small objects - chiefly vessels, scarabs, amulets, and beads - have been used to establish such contact. Vessels assigned to this period in Egypt - either by royal tomb provenance or by inscription - are published elsewhere, with discussion on the origin of shapes.[24]

At present there appear to be four means of distinguishing vases made by an ancient Egyptian from those made by another craftsman, whether ancient or modern. As might be expected, each of these methods has limitations:

- 1) Type and provenance of stone. Determinations are usually dependent on the archaeologist, who may or may not have geological knowledge.
- 2) Shape. Any vase excavated in Egypt is assumed to have been made by an ancient Egyptian and, except in specific instances, to have derived from a shape originating there. (Such an assumption relies somewhat on the fact that Egyptian craftsmen were highly skilled in stoneworking, partly because many stones were available to them.)
- 3) Technology (how the vessel was hollowed out, the foot finished, or other features achieved). Although technology may appear to deal with non-controversial criteria, provenance as well as stone and shape characteristics must be considered with it.
- 4) Quality (high quality speaking for ancient Egypt). Judgements of quality - as seen in proportion, surface treatment, integrity of form, crispness of detail, and stone selection - are dependent on the knowledge and sensitivity of individual scholars, who will not necessarily agree.

The first means - stone type and provenance - would appear to be the most certain area to yield hard data; it requires the same knowledge that would be necessary to determine whether a particular stone, made into a local shape, had come from Egypt as raw material. Unfortunately, there is little geological knowledge among archaeologists studying the period in question. We - Egyptologists and our colleagues - are usually not trained to differentiate plutonic from volcanic rocks or sedimentary from metamorphic; or to look for crystal configuration and grain size in addition to color, pattern, or texture. For the non-Egyptologist to correlate stones she/he finds in excavations with those used for Egyptian vessels is unrealistic. Different types of rocks can appear quite similar. By macroscopic visual examination, a geologist may be able to correctly identify a rock. But B.C. Schreiber stated solely by visual means that a bowl in the Metropolitan Museum (12.181.96) could be anorthosite gneiss (metamorphic) or black limestone or dolomite (sedimentary). A specific identification usually requires petrography, analysis of a thin section prepared from a chip of rock, although simple, non-destructive tests may help considerably. With petrographic information from a vessel and from rocks from potential quarry sources, it may be

21 At two Israeli sites of Early Bronze date, 'Egyptian' vessels were made with local clay but used the straw temper and higher firing temperature of Egyptian-made pottery. N. Porat, Trade of Pottery between Egypt and Cana'an in Ancient Times. Notes on Current Research, in: Bulletin of the Israeli Academic Center in Cairo 8, 1987, 5.

22 E. Umberger and C. Klein, Aztec Art and Imperial Expansion, in: Latin American Horizons, ed. D.S. Rice, Washington, D.C., 1993, 295-336.

23 On the difficulty of using specialized ceramics to determine chronology, see S.J. Bourke, The Transition from the Middle to the Late Bronze Age in Syria. The Evidence from Tell Nebi Mend, in: Levant 25, 1993, 166f., who writes: „This is the major problem with the use of scarce imports to determine chronology. If any occurrence is rare at the very best, the ability to detect intentional (heirloom) and unintentional (taphonomic) displacement of such material to a later time must be suspect. Given that many such displacements are known to have occurred, any system used must have a reasonable chance of detecting such displacements. The current use of rarely occurring fine and imported wares in presence/absence mode does not."

24 Lilyquist 1995.

possible to conclude that the vessel material originated from a specific quarry; however this requires considerable reference data on quarry sources. To date, the sources of certain stones used for Egyptian vessels have not been located,[25] and detailed geological descriptions of rocks from quarries known today (let alone in ancient times) are often not available (see chapter 5.3 for a sampling).

Currently, the assessments of two archaeologists on stone identification and provenance govern the manner in which most vases and materials found in the Levant and Aegean are interpreted: I. Ben-Dor and P. Warren.[26]

In 1945, I. Ben-Dor published certain stone vases in the Palestine Archaeological Museum, with the geological assistance of M. Avnimelech and J.H. Haleblian, and determined that some of the vessels were 'gypsum.'[27] Gypsum is calcium sulfate dihydrate ($CaSO_4 \cdot 2H_20$), and rocks of it can be coarse-grained on the one hand or homogenous, fine-grained, and translucent on the other. The fine-grained type, which rarely will have banding, is *geologically* identified as 'alabaster,'[28] looking much like the stone of a small stand from Kāmid el-Lōz (Miron 420)[29] whose translucent, waxy yellowish color with tiny parallel veins led the geologist H. Schneider to incorrectly identify it as alabaster (i.e. gypsum rock) by visual means (Pl. 1,1-2).

Two gypsum rock vessels in the Metropolitan Museum from an Archaic period tomb at Saqqara illustrate this material (Pl. 1,4). That on the right has dark striations and voids; that on the left is more compact and homogenous, very slightly translucent. Weathered examples of gypsum often appear chalky, and the surfaces 'melted' when affected by water (surface dissolution). I. Ben-Dor's gypsum vessels showed tool marks and were more poorly shaped than vessels of the same shapes in the Jerusalem museum that were made of harder white stone. He identified the harder stone (method unstated) as 'Egyptian alabaster.'

'Egyptian alabaster,' - often now termed 'calcite' but also 'calcite-alabaster,'[30] 'travertine,'[31] 'calcareous travertine,' 'calc-onyx,'[32] 'aragonite'[33] and 'calcareous sinter' (calc-sinter)[34] - differs chemically from the geological alabaster. 'Egyptian alabaster' is a variety of limestone (calcium carbonate) that consists largely of the *mineral* calcite;[35] it is calcium carbonate-based or calcareous rock. As it is formed from mineral springs which seep into groundholes or drip into caves, it can have different appearances. If the formation is seasonal, the resulting rock

25 For example, Greene's travertine (Greene 1990: 119), marble (142f.), red and white limestone breccia (137f.), serpentine (152), three types of black and white andesite porphyry (55), meta-andesite porphyry and amphibolite (157f.).

26 Ben-Dor 1945; Warren 1965-1991b; Warren and Hankey 1989.

27 Samples taken from the Milhamiya quarry had morphological structure and size/density grain similarities to those of three Beth Shan gypsum rock vessels; a polished sample had similar color and general appearance. A quantitative analysis of one juglet also showed close similarities to the modern quarry samples. It should be understood, however, that the bulk analysis used in the 1940s would not be used for provenancing today: trace elements and isotopic groups and comparisons in quarry and collection samples would be used. B. Kleinmann reports that „the comparative chemical analysis given by Ben-Dor does not show any differences between the Menahemia [Milhamiya] gypsum and that of the vessels, but this fact ... is not proof for the origin of the latter. All gypsum contains impurities like quartz and calcite. The analysis of a gypsum sample with so numerous inclusions should have given higher values in iron, magnesium, aluminium and silica" (Kleinmann 1976).

28 Prof. B.C. Schreiber, communications, September-October, 1994.

29 Miron 1990: 97 no. 420 pl. 26,6.

30 A.P. Middleton, letter, April 18, 1995; Klemm and Klemm 1992.

31 Greene 1989: 109f.; Harrell 1990.

32 N. Porat, letter, December 12, 1994.

33 Aragonite is a form of calcium carbonate; it forms at a higher temperature, eventually reverts back to calcareous rock, and is slightly more dense than the latter. The term calcareous rock covers both calcite and aragonite minerals, and the two may look so much alike that they cannot be differentiated except by X-ray defraction (B.C. Schreiber, communication). Geologists tend to use the term 'rock' for raw material; 'stone' is a layman's term, often applied to worked objects.

34 H. Schneider.

35 There are six or so varieties of calcium carbonate, dependent on the temperature and pressure under which they are formed (Schreiber communication); two commonly occur in nature (calcareous rock and aragonite).

often will be banded; if it is year-round, it will proabably be fine-grained and relatively uniform. If the rock has bands that are spaced regularly rather than variously, it probably means seasonal or cyclic growth. If it forms around the mouth of a spring, it commonly includes organic matter that makes it more porous and may be called tufa.[36] Calcareous rock is harder than gypsum rock and is less affected by water. Three calcareous stone vessels are illustrated in Plate 1,3, from the same tomb as those in Plate 1,4 .That on the left is somewhat crystalline, the center banded and translucent with tiny crinkles, and the right, opaque and banded.[37]

These geological differences aside, I. Ben-Dor focused on the physical appearance of what he termed 'Egyptian alabaster' (and we would call calcareous rock), describing it as „a translucent stone, whitish to pale yellow in colour, and often with bands of darker or lighter shades."[38] In assessing the vessels in the Palestine Archaeological Museum, he concluded that, as several similarly shaped vessels of this stone could be seen in the Egyptian Museum, Cairo, and, as „banded calcite is confined solely to Egypt, [with] no worked deposits of banded calcite ... so far recorded in any other country [than Egypt] in the Near East," the vessels of this appearance in Palestine were of Egyptian origin.[39]

The second and much more knowledgeable archaeologist whose identifications of vessel stone types and provenances have been significant to Mediterranean historians is P. Warren. Warren has studied countless stone vessels in the Aegean, particularly Crete, and has sought stone sources on Crete. His firsthand experience with Minoan stone vessels is extensive, and in all of his work he has attempted to correctly identify the rocks, from which vessels were made. And yet, much is still dependent on macroscopic appearance,[40] and makes use of definitions which do not necessarily correlate with the definitions of others. Like Ben-Dor, Warren sees extensive Egyptian influence, but additionally considers colorful dark stones as well as light-colored carbonates and sulfates.

According to Warren's brief survey of Crete's stone resources,[41] the island „consists of a mass of limestones of different periods on a schist, phyllite or crystalline limestone bed."[42] Among the indigenous white-to-beige stones used by the Minoans for vases, he then lists the following with descriptions:

- 'Gypsum': in 1969, approximately 165 gypsum quarries and 10 mines known in Crete, the stone appearing everywhere in outcrops.
- 'Marble': both mottled and banded; a little of the white variety prominent in the Cylcades and Greece.
- 'Limestone': one variety banded like marble, the other translucent but not [visibly] crystalline.
- 'Calcite':one form „translucent creamy white ... [which] sometimes resembles marble" (Pl.2,1), and the other, „sometimes called alabaster in publications, is close to banded tufa ... translucent golden or honey brown with opaque creamy white patches;" the white variety could be confused with Cycladic marble.
  'Banded tufa': „calcite in a banded form ... also called 'wavy-banded alabaster' ... calcareous tufa or travertine would not be wrong ... It is creamy white with beautiful orange, brown, grey and pink wavy bands."

In contrast to these rocks, Warren positions „alabaster, Egyptian ... composed of the mineral calcite ... [with] the presence of fine crinkly bands in the creamy stone."[43] When such material has been found in an 'Egyptian' shape, he has considered it to be an import; when it has been made into a local shape, he has suggested that Egyptian rock had been imported as raw material.[44]

36 B.C. Schreiber, communication.

37 Harrell 1990: 39 distinguishes three types of calcareous rock: opaque white fine-grained, translucent varicolored coarse-grained, and a banded type that „is an interlayering of the first two varieties."

38 The Early Bronze age vessels from Ai were tested and found to be calcium carbonate (Ben-Dor 1945: 95; see Amiran 1970).

39 Non-Egyptian style and crude workmanship were signs of local work in addition to the gypsum material. W.F. Albright had already assigned Tell Beit Mirsim vases to Egypt „where analogies are abundant" (Albright 1932: 1).

40 As well as shape. But see now Wilson and Day 1994.

41 Warren 1969: 124-41.

42 Warren 1969: 124.

43 Warren 1969: 125f.

As for vases made of stone resembling the hard stones of Egypt, Warren has considered them imports, whether left as is, or modified by the Minoans. When they were made of Cretan stone that might be geologicaly similar to the Egyptian stone but where the vessel had an 'Egyptian' shape, he has considered them local imitations of Egyptian vases.[45] Among the hard and variegated rocks that Warren cites on Crete in his survey are the following:[46]

- 'Basalt.'
- 'Breccia': of two types.
- 'Diorite.'
- 'Dolomite': limestone and marble; occurs in large masses.
- 'Gabbro,' and possibly 'a truly porphyritic rock with crystals well scattered.'[47]
- 'Granite': small outcrop.
- 'Marble': both mottled and banded.
- 'Serpentine' of various colors: extensive outcrops.

Warren believes most of these materials were used for vessels. However, he also describes colored vessel stones that - like his 'Egyptian alabaster' - he believes were not known on Crete and, therefore, must have been imported to Crete for manufacture:

- 'Antico rosso.'
- '*Lapis lacedaemonius*' porphyritic rock with dark green or brown matrix and light green to pale yellow phenocrysts.
- 'Obsidian.'

('Porphyry' blocks have been reported at Kato Zakro.[48])

With the guidelines of I. Ben-Dor and P. Warren at hand, modern archaeologists have often assumed that the material they most frequently call 'alabaster' (calcium carbonate-based sedimentary rock) occurs only in Egypt, and that if vessels thought to be made of that material are found outside the Cairo-to-Luxor area where this material is known today, it means that the vessel or rock for it was imported from Egypt. Likewise, when vases of what are thought to be hard Egyptian stones are found outside Egypt, they have been considered imports from Egypt unless their shapes were strongly local. (The importation of hard rock from Egypt has not been proposed.)

As an Egyptian archaeologist and museum curator, this writer must state at the outset that few of the vessels assigned to Egypt being displayed in various cities of the Levant and Cyprus in 1989 seemed unquestionably Egyptian in material, shape, and detail. Likewise, the reasons some vessels displayed in Minoan-Mycenaean collections at various locations were termed 'Egyptian alabaster' (such as Pl. 2,2 from Aghia Triadha), while Minoan shapes in similar-looking materials were not, was puzzling (such as a bridge-spouted bowl from the Royal Tomb at Isopata [Pl. 3, center rear];[49] note also an Early Minoan III - Middle Minoan I pyxis with crinkly

44 The only proof of this seems to be „waste pieces ... found in the 1957-61 Knossos excavations" (Warren 1969: 125f.). The site may have been the Royal Road: He refers to a „series of over fifty bore-cores drilled out in the manufacture of vases ... [and] a quantity of waste pieces in a variety of stones" (Warren 1967a: 199). R.D.G. Evely apparently refers to them in writing of „the considerable series of bore cores [48 'serpentine', 2 gabbro, 1 banded tufa, 1 'breccia'] and perhaps manufacturing debris (largely steatite) from the general area of the House of Ivories ... not firmly connected with the Middle Minoan-Late Minoan Ib structure along the Royal Road" (Evely 1993: 181). Warren states that 'Egyptian alabaster' was „being worked on part of the town site (Royal Road)" (Warren 1989: 8); further, that a fragment of it from the Stratigraphical Museum site had a sawn edge. The author was not able to see any relevant material at Knossos in 1989, and therefore cannot give a first-hand opinion of it. P. Warren has kindly communicated unpublished details of two waste pieces subsequently (letter, April 8, 1995).

45 Warren, *passim*.

46 Warren 1969: 124-41.

47 Warren 1969: 132.

48 Evely 1993: 182 summarizes the published data.

49 Herakleion 598 (Warren 1969: 34 type 13 B, 'banded tufa'). Seen by the author only in photograph; Evans 1905: 539 terms it „veined and banded alabaster." The light-colored half of Herakleion 1232 (Warren 1969: 24 type 8 E, „gray/black limestone with yellow calcite") could easily be mistaken for the material termed 'Egyptian alabaster.' Likewise a disk-based flask from Beth Shan (University Museum 32-15-218), made of a banded translucent rock with tiny crinkles, could be considered 'Egyptian' on the basis of material but could never be on shape.

lines [Pl. 2,1]). Of course the soil conditions of lands away from the Nile desert make preservation difficult, and so vessels found there cannot have the preserved surfaces Egyptian vessels do.[50] But with the variety - indeed the wealth - of stones present in the deserts of Nubia across to the Arabian Peninsula, up the Sinai to Anatolia, and westward to Cyprus, the Cyclades, the Greek mainland, and down to Crete, it seems odd that so many vessels have been traced back to Egypt on the basis of light or colored stones that look 'Egyptian.'

In fact, shape often enters into the determination of vessel provenance (more on this subject below). But at a time when trade and chronology studies are much in focus, it seems to this writer that stone identifications have become unnecessarily facile (for some of the author's visual impressions of specific vessels see chapter 5.1). Geologic studies have progressed since J.D.S. Pendlebury's and I. Ben-Dor's limited observations, and better identifications could be advanced now by archaeologists and geologists working together. For instance, the mineralogist B. Kleinmann, directly contradicts Ben-Dor's pronouncement in an appendix for the 1976 unpublished thesis of C. Clamer:

> „A banded calcite which in appearance is very similar to the 'Egyptian alabaster' = calcite (A. Lucas) occurs at various localities in Palestine, e.g. in the Negev Desert, within the Shagur formation (quarried near Deir Allah, Jordan Valley)."[51]

The geological occurence of this calcareous rock in the Eastern Mediterranean is also cited in published works. D. Levitte identified „widespread carbonate travertine terraces in the Beth Shean basin" in a project involving the use of two caves during the Early Bronze period of Palestine, noting that „the population of this area took advantage of the ease of excavation in the soft Lisan and travertine beds to dig its burial caves."[52] F. Bender[53] and P.G. Macumber[54] note calcareous rock in Jordan, and P. Goldberg has seen banded calcium carbonate flowstones in the Negev with a 10-15 cm. accumulation.[55] Limestone cliffs in the Sinai were described by W.M.F. Petrie early in the century as

> „... noticeable for the extraordinary regularity of the strata. The alternations of harder and softer stone in the part which we crossed are so uniform that it appears exactly like a ruined building. There is much calcite in the limestone, some of it with good rhombic fracture, but not transparent; this is like the calcite so abundant on the plateau at Tell el Amarna and elsewhere."[56]

Working in Cyprus, J.L. Myres thought that most 'alabaster' (calcareous rock) vessels found there must come from Egypt, but he stated that „alabaster of fair quality is found in the lowland parts of Cyprus, as in most Mediterranean coast-lands."[57] This is born out by B.C. Schreiber, who has seen a good deal of accessible calcareous rock in Cyprus. P. Warren's 'banded tufa' and creamy white type of 'calcite' in Crete[58] may geologically be this same material, as may the 'onyx marble (calcite)' of J. Papageorgakis and E. Mposkos.[59] C. Elliott's[60] term calcarenite in Cyprus is not defined.

50 Such vessels often have a 'rotted' or 'leached' appearance, probably due to humidity or the lack thereof. Current appearance could, however, reflect the original durability of the stone.

51 Kleinmann 1976: 134.

52 Amiran et al. 1986: 14.

53 Bender 1974: 24-26, 172f.

54 Macumber 1992: 206-10.

55 P. Goldberg, communication, October 6, 1994.

56 Petrie and Currelly 1906: 17f.; B.C. Schreiber points out that limestone is calcite by definition (communication, November 3, 1994); Petrie used 'calcite' for the material this author terms 'calcareous rock.'

57 Myres 1914: 274.

58 Warren 1969: 126-28.

59 Papageorgakis and Mposkos 1988: 650, 658.

60 Elliott 1983.

Resources exist for correctly identifying the rocks of the Mediterranean area. The Israel Geologic Survey has mapped the Sinai as well as Israel; geological services are based in Lebanon, Syria, Turkey, Cyprus, and Greece; and there are current archaeologically-oriented studies in Syria and Jordan. [61] In theory, along the Mediterranean, where limestones and evaporites occur from Italy eastward to the Levant, down and around past Egypt to the west, there are many places where calcareous rock could exist.[62]

To determine whether one of these light stones found outside Egypt was from Cyprus, Jordan, Crete, or elsewhere would be the next step for improved stone identification. A.P. Middleton, S.M. Bradley[63] and J.H. Harrell[64] have had some success in using various techniques to source Egyptian limestones, and Elliott et al.[65] have traced Roman and probably Late Bronze age basalt artifacts found on Cyprus back to the Levant. But it cannot be done visually, for, as Gale et al. recently found in working with gypsum rock from Bronze Age palaces:

> „Traditional archaeological methods can take the question [of provenance] no further [than locating possible quarries], since there are no straightforward criteria, such as physical appearance, which can be used to assign the likely provenance of gypsum."[66]

Of equal importance in such new investigations would be the consideration of local materials that might *look* like calcareous rocks but are not so, bearing in mind that even this material can be represented by various-looking rocks within a single deposit; and that deposition, weathering, or poor quality can mask the characteristics archaeologists have traditionally looked for (e.g., crinkly bands, fine-grained translucence). Schreiber knows a uniform, fine-grained gypsum rock in southeastern Turkey that can look like a fine-grained translucent calcareous rock. She also has seen both limestone and fine-grained gypsum rocks that have been formed in caves in the southwestern quarter of the Sinai Peninsula (as well as the point opposite on the Egyptian side with nearby islands):[67] both the banded calcareous and gypsum rocks could be called travertine.[68] She also states that, as there is Miocene gypsum in Greece, Crete, and Cyprus, and because there are caves in those lands, gypsum-travertine could exist there too.

In fact, H.-C. Einfalt mentions gypsum (rock) on Thera and a banded and crystalline form of it in Crete.[69] Gale et al. describe gypsum (rock) used for Minoan-Mycenaen buildings that is coarsely crystalline, and another that is fine-grained „known as alabaster or alabastrine gypsum ... a highly decorative material of white or pinkish colour and ... translucent to varying degrees."[70] J. Papageorgakis and E. Mposkos saw gypsum (rock) used at the Knossos palace that was „fine-grained ... relatively compact and [could] be used as building stone ... especially when [it] contain[ed] finely distributed carbonate (dolomite or calcite)," as samples they studied.[71]

61 L. Lazzarini of the Istituto Universitario di Architetura di Venezia is studying local geological formations in northwestern Syria for the Italian Archaeological Expedition to Tell Mardikh and Tell Afis (L. Lazzarini, communication, October 31, 1994); O. Williams-Thorpe of the Open University Department of Earth Sciences, Milton Keynes UK is part of an Israeli-Jordanian project (G. Philip, communication, October 18, 1994). On Crete, see the clay studies of Wilson and Day 1994: 54-57.

62 B.C. Schreiber, communication.

63 Middleton and Bradley 1989.

64 Harrell 1991.

65 Elliott et al. 1986.

66 Gale et al. 1988: 58.

67 That point is near Gebel el-Zeit, a site of galena mines from late Dynasty 12 into Ramesside times: Castel and Soukiassian 1989: 6. I. Shaw has noted that a Dynasty 17 governor of Coptos „traditionally the nerve-centre for quarrying and mining in the eastern Desert" left a stela at Gebel el-Zeit, and sees it as „the northernmost outpost for expeditions sponsored by 17th dynasty kings ... whose power base was at Thebes" (I. Shaw, Pharaonic Quarrying and Mining. Settlement and Procurement in Egypt's Marginal Regions, in: Antiquity 68 no. 258, March 1994, 114).

68 Quartz travertine also (rarely) exists (B.C. Schreiber).

69 Einfalt 1978: 527; as Waelkens 1992: 8.

70 Gale et al. 1988: 57.

71 Papageorgakis and Mposkos 1988: 651.

According to N. Gorur of the International Technical University in Istanbul, there are Triassic evaporites in a land arc along southeastern Turkey - northern Syria that include a layered gypsum rock that is white-to-gray-to-brownish-red, even pink.[72] And in Israel there are deposits of Triassic-age gypsum rock that could, in theory, be banded. Outcrops of gypsum rock in Jordan described by B. Kleinmann were „dense whitish-yellow, sometimes layered (like the 'Egyptian alabaster')," as well as a more coarse type.[73]

Nor is the sensitivity of gypsum to water necessarily a problem for stone vasemaking, as oil or wax could have been applied to the surface, as practiced today.[74] R.D.G. Evely has discussed oil and heat for Minoan stone vessels;[75] and G. Testa states that at Voltera today, craftsmen plunge their finished gypsum vessels into boiling water to surface harden them.[76]

There are other white-to-beige soft stones that might be considered. P. Warren lists several on Crete whose appearance could look like the calcareous rocks found in Egypt.[77] On Thera, H.-C. Einfalt describes fine-grained whitish 'tuff' (layered and altered), and his geologic map shows marble-like limestone and banded marble;[78] P. Warren[79] lists „limestone, hard, white marble-like, translucent but apparently non-crystalline" there.

The state of knowledge among archaeologists for dark, variegated rock sources outside Egypt also offers opportunities for research. Colored and brecciated limestones, serpentinites, gabbros, diorites, and other mottled stones surely existed in Egypt, but there are similar-looking, if not geologically similar, rocks in the Near East and Aegean also.[80] In Jordan, F. Bender wrote of hornblende-gabbros, quartz-diorites, granodiorites, and quartzporphyries.[81] W.M.F. Petrie noted „granite basalt [sic], black quartzose rock, porphyry, and gneiss" in the Sinai.[82] On Thera, H.-C. Einfalt illustrates locations of 'hornblende-dacite,' pebbles of volcanic rocks, as well as the softer 'serpentine.'[83] On Crete, M.J. Becker cites a small quantity of granite, syenite, diorite, etc.,[84] and J. Papageorgakis and E. Mposkos cite gabbros and other hard rocks.[85] C. Elliott[86] mentions a variety of stones in Cyprus. W. Ryan[87] states that there is a land arc of volcanic rock (which would include the porphyritic rock *lapis lacedaemonius*) from northern Greece into Turkey; i.e., plutonic mafic rocks can be found in western Greece, the Cyclades, and Turkey.[88] The only question is, can they be matched up with the stones used for artifacts there.

72 W. Pitman, communication, September 29, 1994.

73 Kleinmann 1976; I. Ben-Dor also mentions a gypsum rock banded with gray bituminous veins, which [increase] its resemblance to 'Egyptian alabaster' (Ben-Dor 1945: 94).

74 B.C. Schreiber, communication.

75 Evely 1993: 178.

76 G. Testa, communication, April 12, 1995.

77 See list above, p. 139.

78 Einfalt 1978.

79 Warren 1979: 102.

80 Galetti et al. 1992. A recent petrographic study of Roman granites was undertaken because certain Egyptian varieties of red granite were visually difficult to distinguish from Sardinian specimens.

81 These often exposed in the Wadi el-Araba and in south Jordan; Bender 1974: 19-38 *passim*, 103ff., 172f.

82 Petrie and Currelly 1906: 16-20, 24, 34-37.

83 Einfalt 1978.

84 Becker 1975: 251.

85 Papageorgakis and Mposkos 1988: 655 and bibliography.

86 Elliott 1983.

87 W. Ryan, communication, September - November, 1994.

88 T. Juteau, Les ophiolites des nappes d'Anatayla (Taurides occidentales, Turquie). Pétrologie d'un fragment de l'ancienne croûte océanique tethysienne, in: Science de la terre (Mémoire 32), Nancy 1975, 692.

As for the softer serpentinites, archaeologists have recognized their existence in Crete and Cyprus.[89] But according to W. Ryan,[90] they are abundant in western Greece (Vourous ophiolite), southeast Turkey (Baer-Bassit Massif), and northwest Syria (Hatay ophiolite).[91] In these volcanic units, as exemplified in the Kyrenia Ridge of northern Cyprus, one can also find intrusions of gabbro, quartz-porphyry, and syenite. The latter is a plutonic rock containing hornblende and quartz whose name is derived from Syene in Egypt, where the rock was quarried in ancient times. Serpentinite and gabbro also occur in Nubia[92] and in the Sinai.[93]

All of the above are remarks on the necessity and possibilities of improving stone identification. But until full-scale geological expertise is brought to bear on the general situation - complete with collections of provenanced material, thin-sectioning, and comparison of archaeological objects (unfortunately often exempt from sampling) - determinations are more provisional than certain, dependent as they are on the archaeologist's judgement and occasional geologist's examination.

The second and third means to determine vessel provenance is shape (including size and proportion) and technology. Here too, time-honored assumptions must be examined. The number of stone vessels in Egypt available for study today is probably too numerous for any one Egyptian archaeologist to control;[94] specialists are no doubt needed. At present, the duration of a type is often not known. This is partly because the dating of archaeological assemblages is in flux (with the results often at variance with what appeared in the early archaeological reports of Petrie and others).[95] It is also because the Egyptians were traditional people. Cylinder jars, for example, have a long life, as Warren partially realized;[96] and it is not inconceivable that one example inscribed *Nfr-k3-rʿ* from Mirgissa names a Dynasty 17 rather than a Dynasty 6 Egyptian king, as suggested by J. Vercoutter.[97] The Egyptians also harked back to earlier eras from time to time, perhaps especially in a period of usurpers like the Hyksos. And the Egyptians reused items, perhaps particularly in periods of lesser wealth like Dynasties 15/17. The result is that, while floruits are known for distinctive types of good quality vases, the poorer examples and non-distinctive types are problematic.[98]

In cataloging shape, style, and technology, we must also recognize that foreign people, including craftsmen, were an increasingly important part of Egypt's population during the period under review. We may ultimately conclude that find spot, material, quality, and workmanship signify that a vase was made in Egypt; but those factors do not define the cultural identity of the craftsman. In a discussion of New Kingdom economy, J. Janssen

89 See also Becker 1976: 361-74.

90 W. Ryan, communication.

91 A.L. Knipper, A.N. Savel'ev, and M. Rukie, Ophiolite Association of the Northwestern Syria [in Russian], in: Geotectonika 1, 1988, 29-104; H. Lapierre, Les formations sédimentaire et éruptives des nappes de Mamonia et leurs rélations avec le massif de Troodos (Chypre occidentale), in: Mémoire de la Société géologique de France 123, 132; A.L. Knipper and A.Ya. Sharaskin, Tectonic Evolution of the Western Part of the Peri-Arabian Ophiolite Arc, in: Geological Structure of the North-eastern Mediterranean, eds. V.A. Krasheninnikov and J.K. Hall, Jerusalem 1994, 295-305.

92 W. Ryan, communication.

93 P. Goldberg, communication.

94 See Lilyquist 1995, for a specific study.

95 See Chr. Lilyquist, On [Late] Middle Kingdom Style, with Reference to Hard Stone Scarabs, Inlaid Jewels, and Beni Hasan, in: Discussions in Egyptology 27, 1993, 45-57. As for Petrie 1937 (the examples largely from the collection in University College London), many scholars use this as a basic source without the understanding that many vases are without provenance, discrepancies exist between the author's and excavator's dating, and modifications in archaeological dating have occurred since 1937.

96 Warren 1979: 99.

97 Vercoutter 1976: 285; cf. Moorey 1994: 45f. A jar with collared neck from a New Kingdom context was reconstructed by H. Carter: the reconstruction may or may not be accurate (Lilyquist 1995, no. 38).

98 The extant vases catalogued in Lilyquist 1995, are the accidents of preservation. Furthermore, because of their association with royalty, it is possible that some types and styles may be altogether missing. It should also be noted that some types may have been in existence for poorer classes of society before being adopted in luxury materials or sizes.

states that in Papyrus Leningrad 1116 *verso* (ca. fifteenth century B.C.), the names of most of the craftsmen in the royal workshop who manufacture objects made of materials such as ebony and ivory are Syrian, and that artists and highly skilled craftsmen were among the relatively few captives brought back from Dynasty 18 campaigns.[99] In the tomb of Rekhmire (Theban tomb 100) where the owner inspects craftsmen in the great temple of Amun at Karnak, there are older-looking men with receeding hairlines working leather, metal, wood, and a stone vase,[100] and in the tomb of Puyemre (Theban tomb 39), such men also make chariots, a craft that Egyptians had to learn from Asiatics.[101] Of course these workers could be the experienced master craftsmen; but signs of age and lack of wigs are often given to men of lesser status, as foreigners would be, and there is no shortage of young-looking men with black wigs in these manufacturing scenes, men who are most characteristically understood as Egyptians. This means that an artistic sensibility or technology outside Egyptian tradition could be *introduced* into Egyptian production.

Nor does the skill of any craftsman in Egypt, the wealth of stones available, or the favorable conditions for preservation there certify that any particular vase type found in Egypt originated in Egypt.[102] With studies of relative chronology throughout the Mediterranean in a state of flux, it is not always possible to say who first used a particular type. Thus to coin a type 'Egyptian' because the best preserved or finest quality example was found in Egypt rather than elsewhere could be inappropriate.

2 VESSELS ILLUSTRATING THE PROBLEMS

2.1 LIGHT COLORED VESSELS FOUND IN PALESTINE ('ALABASTER,' EITHER CARBONATE OR SULFATE)

The light stone used for small juglets, elongated shoulder jars, ovoid flasks, and baggy jars from Palestine is beige to white, often with lighter, preferential banding, sometimes in quite regular patterns.[103] The surface can be smooth or appear 'leached,' as if clay inclusions had weatherd out. Since we cannot be sure of stone identity (although we could assume most are carbonate rather than sulfate), we will refer to them in the few paragraphs that follow as 'Egyptian alabaster' and 'gypsum' as Ben-Dor defined them. However we will concentrate on workmanship and shape (including size and proportion).

The juglet, in the Middle Bronze period, is Palestinian rather than Egyptian or Mesopotamian. It occurs widely in Syria and Palestine in pottery with round and knob bases, and it occurs in local faience as well. In fact, while I. Ben-Dor stated that 'gypsum' examples there usually had flat handles and 'Egyptian alabaster' juglets had round, 'Egytian Alabaster' juglets actually employ both types (Pl. 4,1-2).[104]

99 J. Janssen, Prolegomena to the Study of Egypt's Economic History during the New Kingdom, in: Studien zur altägyptischen Kultur 3, 1975, 160, 172.

100 N. de G. Davies, The Tomb of Rehk-mi-re' at Thebes, New York 1943, pls. 52-55; C.K. Wilkinson and M. Hill, Egyptian Wall Paintings, The Metropolitan Museum of Art's Collection of Facsimiles, New York 1983, 90f., MMA 31.6.13; cf. N. de G. Davies, Paintings from the Tomb of Rekh-mi-re' at Thebes, New York 1935, pl. 17.

101 N. de G. Davies, The Tomb of Puyemrê at Thebes 1, New York 1922, 67, 70 pl. 23.

102 Lilyquist 1995, Introduction.

103 For a good color photograph of translucent stone with regular, opaque bands, see: Treasure of the Holy Land. Ancient Art from the Israel Museum (Exhibition catalogue MMA), New York 1986, 121; and for a good color photograph of the various shapes in stone as well as faience and clay, see Ziffer 1990: 55.

104 Ben-Dor 1945.

As for the shoulder jar, according to Ben-Dor, the 'Egyptian alabaster' examples had a sharp rather than round shoulder; a flared rather than flat-topped rim; and an interior drilled straight down rather than contoured to the wall. However, sharp shoulder angles and flared necks can occur on both 'gypsum' and 'Egyptian alabaster' examples (Pl. 4,3-4).[105] To the claim that the walls of 'gypsum' examples follow the contour of the exterior, rather than being bored straight down as in 'Egyptian alabaster' examples, it should be noted that shoulder jars in Egypt usually follow the exterior,[106] the general practice with Egyptian vessels.[107]

As for the ovoid flask (Pl. 4,5-6), there is indeed a late Middle Kingdom counterpart to the shape in Egypt: a drop-shaped jar with an everted, often incised, rim. But the Egyptian type does not usually have a flat-topped rim and a slightly flattened base (see Pl. 4,5, left), as locally made Palestinian faience jars often do.[108] Furthermore, the stone ovoid type in Egypt is small, whereas outside Egypt it exists in large sizes: ca. 50 cm. high from the Byblos royal tombs (sometimes with a disk base), from a Nabi Rubin cave, and at Kalyvia Mesara[109] - truly unimaginable sizes and detail for the Egyptian type.

Baggy jars, both tall and squat versions (Pl. 5,1-2), were the fourth shape that I. Ben-Dor believed had been imported from Egypt.[110] As his baggy 'Egyptian alabaster' jars in Palestine were often oval rather than round in plan (as opposed to Egypt), the scholar suggested that his jars had been made in Egypt for the export market.[111] To the fact that the oval plan also existed for his 'gypsum' shoulder jar (his C 5 and 6), the *tazze* (E 1), and the pyxis (F 3, 9?, 12, 13, and 14) - all of which Ben-Dor considered locally made - that scholar would have had to argue that the oval 'gypsum' jars were copying an export feature. In fact the oval plan that exists widely for his 'Egyptian alabaster' juglets, shoulder jars,[112] and ovoid jars in Palestine (and only rarely in Egypt) is found already on a medium-sized Syrian pot dated to the late third millennium B.C.[113]

In truth, Ben-Dor's 'Egyptian alabaster' baggy jars have a flared neck in Palestine like his 'gypsum' jars, often with a flat top (Pl. 5,2), as with other vessel shapes in this group. And there is sometimes a sharp angle between side and base which is foreign to the Egyptian examples (Pl. 5,3, left). The more 'Palestinian' shapes *do* exist in Egypt[114] (as the vessels in Pl. 6,2), imported or made by resident Canaanites, in the author's view. But the more standard Egyptian 'baggy jar' has an oval to piriform profile with flat base, distinct neck, and flat rim.[115] And whereas the baggy jar in Palestine continued into the Late Bronze age[116] (sometimes with a more angled base and extended rim, as the late Middle Bronze example from Ebla, Pl. 5,3, left), in Egypt it is a *piriform jar with flattened base and flat extended rim* that becomes the popular form in Dynasty 18 (cf. Pl. 19,2).

To all of the details of shape that connect I. Ben-Dor's 'Egyptian alabaster' vases with his 'gypsum' examples, and the differences that separate them from vessels of other types in Egypt, there are further characteristics

105 Finding flared necks on 'gypsum vessels', I. Ben-Dor suggested that they derived from Palestinian pottery (Ben-Dor 1945).

106 See Petrie 1937: nos. 579-82.

107 This feature presumably varries according to the contents intended.

108 C. Sagona, Middle Bronze Faience Vessels from Palestine, in: Zeitschrift des Deutschen Palästina Vereins 96, 1980, 101-20.

109 Lilyquist 1993: 43; Warren 1969: 112 type 43 I. See also the example from Alalakh VII: Woolley 1955: 16 pl. 82, and a 'reused' example from Mallia (Warren 1969: 103 type 42 B, Herakleion 2393). The ovoid jar supposed to be the origin of the latter vessel would have been ca. 35 cm. high; its shape is Middle rather than New Kingdom.

110 Ben-Dor 1945.

111 Many scholars overlook the fact that in the Second Intermediate period, Egypt itself had a mixed population.

112 Ashmolean 1949.37.

113 Lilyquist 1995, Introduction, fig. 1; from Tell el-Abd; A. Bounni, communication, September 1994.

114 For example, Brunton and Engelbach 1927: pl. 22.41; Petrie and Brunton 1924: pl. 41.3; Hayes 1959: fig. 35, from Carter/ Carnarvon excavations in the Assasif.

115 Petrie 1937: nos. 606-07; Petrie and Brunton 1924: pl. 41.1.

116 W.M.F. Petrie traced the Palestinian baggy jar to Crete (Petrie 1931: § 40 nos. 9-11), A. Furumark from the Aegean to Egypt (A. Furumark, The Mycenean Pottery. Analysis and Classification, Stockholm 1941, 39-43). Egypt has earlier oval jar, but in the author's opinion, the popular second millenium shape is Middle Bronze Palestinian.

that separate vessels from the two geographic areas. One of these is proportion; both of his 'gypsum' and 'Egyptian alabaster' types are elongated (Pls. 4,1-6; 5,1-2) while Egyptian vessels are generally less so, being what might be termed 'classic' as opposed to 'mannered.' Another characteristic is style; his vessels are less crisp in shape, as seen in high-necked jars from Ajjūl (Pl. 6,3-4).

I. Ben-Dor thought there were technological features that separated the 'Palestinian' products from the 'Egyptian' also. He argued that his 'gypsum' vessels had been worked with chisels, while his 'Egyptian alabaster' examples had been worked with drills. However, drills were known in the Palestinian Middle Bronze II period, as a limestone macehead from Beth Shan showed Ben-Dor,[117] and as wooden furniture from Jericho also illustrates. But the scholar did not reason that soft-stone vessels could also have been locally made with such a tool.[118]

There is no question that the 'gypsum' vessels Ben-Dor observed were worked with chisels, but there is a question as to whether all light stone vessels in the eastern Mediterranean were so worked. There is also a question as to whether the 'Egyptian alabaster' vessels found in Palestine could not have been made locally from stone closer at hand, more carefully than the 'gypsum' examples Ben-Dor examined, i.e., with drills rather than chisels. The small calcareous stone stand from Kāmid el-Lōz (Miron 420) has drill marks on its upper surface but is flat underneath (Pl. 1,1-2), like the poor vessels Ben-Dor describes. Various light stone, serpentinite, and 'hematite' vessels in the Rockefeller Museum show drill marks; Ben-Dor would have termed them 'Egyptian imports' but the author, 'local products.'[119]

Beyond shape and technical details, however, is the fact that by far the most examples with Palestinian characteristics have been found in Syria-Palestine (in both stones) as compared with Egypt. The late Middle Bronze to very early Late Bronze age was a high cultural period in Palestine - a period when the assemblages of small stone vessels could have been desirable, affordable, and technologically achievable.

2.2 LIGHT COLORED VESSELS FOUND IN THE AEGEAN

Despite the fact that many small objects found in the Aegean have been termed 'Egyptian' and used as evidence in chronology and trade,[120] some stone vessels from Aegean sites have features similar to those on the vessels just described that were found in Palestine. The baggy jars from mainland Greece (Pls. 6,1; 6,5) illustrate the small rim and evenly banded stone of the Palestinian examples (compare, however, the shape with flared neck on Pl. 6,5 with Late Minoan pottery alabastra in the Herakleion Museum, Pl. 6,6). Plate 6,1 has the constricted neck

117 Ben-Dor 1945: 97, n. 3.

118 Despite a circular depression on the bottom of a baggy 'gypsum' jar (Ben-Dor 1945: B 2).

119 Rockefeller 852 (serpentine ointment jar from Jericho 1932, tomb 4, no. 266: J. Garstang, Jericho. City and Necropolis, IV Tombs of M.B.A.ii., V Tombs of M.B.A.ii. and L.B.A.i., VI The Palace Area (Introductory), in: Liverpool Annals of Archaeology and Anthropology 20, 1933, pl. 17.7); Rockefeller 886 (very banded 'alabaster' (sulfate or carbonate), Ajjūl 770; Petrie 1934: pl. 38.29); Rockefeller 1361 (dark stone ointment jar, Ajjūl); Rockefeller 1371 ('alabaster' bag jar, Ajjūl, 1931 season, tomb 32; Petrie 1931: pl. 25.9); Rockefeller 1373 ('obsidian' *kohl* pot trimmed with gold from Ajjūl, 1933 season, FB 815; Petrie 1934: pl. 38,43).

120 Including a 'marble' monkey vessel (Athens NM 2657/6250), faience plaques from Mycenae (Athens NM 2566.1-5, 2718, 12582) and an Amenhotep III scarab from Sellopoulo (Herakleion 489). The size, material, and stylization of the monkey do not make it comparable to Egyptian products dating to the Old and Middle Kingdoms. For the plaques, see Lilyquist and Brill 1993: 61 and Chr. Lilyquist, Faience Plaques from Mycenae, forthcoming. For the scarab, note the question of the hieroglyphic sign above 'two lands': I.E.S. Edwards interpreted it as an upside-down *sb3*, 'star' (in: M.R. Popham and H.W. Catling, Sellopoulo Tombs Three and Four. Two Late Minoan Graves Near Knossos, in: BSA 69, 1974, 216f.), but stated that the "inversion of the star suggests that it was made by someone who was not familiar with the hieroglyphic script, perhaps a foreigner."

and triangular body of a Syro-Palestinian baggy jar. The jar with gold fittings from Mycenae (Pl. 7,2) is probably a refashioned vase, its original mouth plugged, but its even banding and short narrow rim are more reminiscent of the features of Syro-Palestinian examples than of Egyptian.[121]

Other light colored vases said to be of Egyptian origin in Warren 1969 have parallels to Syria-Palestine rather than Egypt too. For the ewer from Mycenae (Pl. 7,1), see a Middle Bronze pottery ewer from Jericho with piriform body and ring foot (Pl. 7,3) as well as a Late Bronze I stone ewer from Kāmid el-Lōz which includes a cord on the handle (Pl. 17,1-3). For the jug from Knossos (Pl. 7,4), note the jug from Megiddo with hatching on rim and handle (Pl. 8,1-2)[122] and the flared neck on a pitcher from Mycenae (Pl. 8,4).

With other vessels, a Minoan *origin* would be tempting to consider. Plates 8,3 and 25,4 show a vessel from Knossos of elongated shape with restored rounded base, a considerable height (24.2 cm.), a flat-topped rim with holes near the edge for a separate neck, and 'petals' on the sides: these features are not Egyptian. Nor is the rim on another jar from central Crete (Pl. 9,1), a jar whose stone is not recognized by the author. Eventually a point is reached where the size and numbers of Minoan shapes in stones thought to look 'Egyptian' is so great[123] that one wonders whether they aren't simply Aegean vessels made in the Aegean. This would be the case with the large non-Egyptian ewer shape of evenly-banded beige stone from Mycenae (Pl. 9,2); a rhyton, ewer, and flask of white stone with gray veins from Zakro (Pl. 9,3-5).[124] A krater with handles from Ebla (Pls. 5,3; 10,3) is not of Egyptian origin either.[125]

2.3 VARIEGATED STONE VESSELS

The shapes of certain vessels amply indicate that variegated stones (often hard) were worked in the Aegean: for example, a 'rhyton' from Zakro (Pl. 11,2); a bridge-spouted bowl from Mycenae (Pl. 10,2); and a jar from Pinies (Pl. 10,1). A jar in Athens with a spool neck and upswung handles (Pl. 11,3), and a jar without a neck (Pl. 11,1, both from Mycenae) also appear to be of medium to hard stones.

Judging by morphological features, hard stones were also worked in the Levant and Sudan. The snake on a metamorphic schist jar from the Amman Airport (Pl. 12,1-2) occurs on Middle Bronze pottery vessels from Palestine to Syria.[126] The ring base on a bowl of hard black-and-white speckled stone (Pl. 12,3-4) is not an Egyptian

121 Note that the 'remaking' idea can go too far: Herakleion 49 (Warren 1969: 102 type 42 B, „alabaster, Egyptian [possibly Cretan banded tufa] ... perhaps a converted Egyptian alabastron") cannot be an upside-down jar, as its base is one with the walls. Athens NM 3252 is so much restored that it is difficult to tell its origin; the preserved wall is from a round, not a piriform jar. There is also a predilection (or necessity?) of Cretan craftsmen to make vessels in pieces.

122 Cf. also the handle on Pl. 23,1 from Ajjūl, and Woolley 1955: pl. 82.21 from Alalakh levels V-IV.

123 Both C.B. Kritzas and J. Sakellarakis stated that there are many more 'Egyptian vases' extant than appeared in Warren 1969 (communications, June 1989).

124 This type of stone was not ever seen by the author for Egyptian objects, but R. Klemm and D.D. Klemm state that they have seen a gray-banded bituminous calcareous rock in the Bosra Wadi Assiuti area of Egypt and also in Asia Minor (communication, February 28, 1990).

125 See Lilyquist 1993: 44-47 for dating. Stone translucent and slightly banded; shape not attested in Egypt; loop handles (on kraters) first attested there in the time of Tuthmosis III (Lilyquist 1995). Likewise the shape of Scandone 1984: 65 is not Egyptian; nor the bowl of Scandone 1988: pl. 12.2. Cf. also the fanciful ewer of Chéhab 1938: no. 35 with Dunand 1950/1954/1958: pl. 111.

126 Analyzed as „metamorphic schist consisting of quartz and pumice" (Hankey 1967: 298). See snake-decorated vessels in Ziffer 1990: 86*-88*, 124, 132; E. Grant, Beth Shemesh (Palestine). Progress of the Haverford Archaeological Expedition, Haverford 1929, 143; Kenyon 1960: 402; Der Königsweg. 9000 Jahre Kunst und Kultur in Jordanien und Palästina, Mainz 1986, no. 90; Dunand 1939: pl. 139; Montet 1928: pl. 61. The snake, whose head points upward, has red pigment in the nostrils and possibly one eye.

feature, and the vessel comes from a site, Meskene-Emar, that dates to the Late Bronze age.[127] The rough base of the hard speckled cup from al-Jesira (Pl. 13,1) could not be expected to have come from an Egyptian workshop; likewise the strong drill marks on a diorite cup from Kerma would not be at home in the Delta-to-Aswan area (Pl. 13,2).[128]

If craftsmen outside Egypt proper could work such rocks, some of them admittedly local, one might ask, what would keep them from fashioning these stones into simplified shapes such as that in Plate 13,4?[129]

Finally, shapes indicate that stone the author would term serpentinite was worked outside Egypt: colorful examples at Alalakh (Pl. 13,3),[130] a fine-grained black variety in Jordan (Pl. 14,1-2),[131] a greenish-gray type at Ras Shamra (Pl. 14,3) and another at Megiddo (Pl. 14,4),[132] and a black variety that can be highly polished in Jordan (Pl. 15,1-2)[133] and at Alalakh (Pl. 15,3-4).[134] (See also examples below from Kāmid el-Lōz.)

2.4 SUMMARY OF THE PROBLEMS

In concluding this survey of new alternatives for old attributions, it appears that at least for ubiquitous, poorly made examples (Pl. 13,4), vessels of unattested shapes (Pl. 14,1-2), and stones unrecognized in Egypt (Pl. 9,1), further study is called for. This is not to say that vessels of Egyptian stone and workmanship did not make their way abroad in ancient times (see conclusion below). A ewer from Mycenae chamber tomb 68[135] seems to have an Egyptian piriform jar as its body; a cylinder jar from Knossos seems Egyptian,[136] although its shape continues at least into the New Kingdom; the amphora with Tuthmosis III's name from Katsamba[137] *should* be Egyptian. But the latter vessel's short neck, thick walls, and somewhat lumpy shape do not speak for high quality; what with artisans and scribes traveling in the fifteenth century B.C., and with possible Levantine production, one should *not* assume that it was a royal gift.

127 A. Caubet, communication, 1990.

128 Reisner 1923: 62 (4) 14, pl. 38.3, upper left. G.A. Reisner interpreted Kerma as a Middle Kingdom trading post manned by Egyptian governors who brought Egyptian artifacts with them. Today, Kerma is recognized as the center of a local, Kushite culture whose rulers developed considerable power by the date of the tumulus in which the diorite cup was found (the end of the Second Intermediate period). Egyptian archaeologists generally continue to see Egyptian-type products at Kerma as imports; the author does not consider the diorite cup in that category.

129 On the use of dark stones in Egypt during the 1650-1400 B.C. period, see Lilyquist 1995, Introduction.

130 Bowl and lid each a different colored serpentinite: Woolley 1955: pl. 81.7. For the Syrian shape, see Lilyquist 1994: 215; Miron 1990: 57, no. 88, pl. 10.

131 The shape, open at both ends, has no parallel in Egypt. Hollow pottery vessels with upswung handles of Middle Minoan III date exist in Oxford (Ashmolean AE 856) and Herakleion.

132 Loud 1948: pl. 231, 7 cm. high; Lilyquist 1993: 47. The judgement of this - and a 'goethite' *kohl* jar found with it - as Levantine rests on unusual stone, deviant shape, and extensive use of gold foil.

133 Note the extensive drill marks and thick walls. For an analysis of the stone see Hankey 1974: 163.

134 British Museum 1951/1-3/42, 5 cm. high, 11 cm. (?) in diameter, polished inside and out, horizontal drill marks near top on inside; probably Woolley 1955: pl. 81,6, AT/39/157 from level VII, on floor of room 2 in Yarimlim's palace.

135 Athens NM 3080 (Warren 1969: 44 type 19 B, Dynasty 18 'Egyptian alabaster alabastron').

136 Herakleion 128 (Warren 1969: 111 type 43 F, northwest part of Palace site, 'Dynasty 6 alabaster' import).

137 Herakleion 2409 (Warren 1969: 113 type 43 J, 'Dynasty 18 alabaster' vase). Lilyquist 1995: no. 95; no trace of original contents.

In general, the author believes that the designation of many vessels in the ancient world as Egyptian is less secure than assumed and is greatly overstressed. If this should be born out, the implications for chronological and cultural studies (*viz* trade) would be considerable,[138] as other classes of portable objects (scarabs and beads, for example) would arguably be part of the same phenomenon.[139]

3 STONE VESSELS FROM KĀMID EL-LŌZ AS A REPRESENTATIVE CORPUS

The stone vessels discovered in the 'Schatzhaus' at Kāmid el-Lōz provide an excellent group in which to study the characteristics discussed above. The vessels vary in material, type, style, and quality. Furthermore, they are essentially complete - unlike some of the vessels from Ras Shamra, Cyprus, and Crete which have been associated with Egypt. Their stones were reviewed for correct identification by F. Rost, H. Schneider, W. Adler, and the author;[140] those identifications will be used here. Most importantly, the vessels and their excavation records have been available for study with the interest, encouragement, and patience of the director, R. Hachmann.[141] Leaving aside the question of stone provenance, we will focus on other characteristics, and review all vessels before offering conclusions.

We may begin with the small stand Miron 420 (4cm. high, Fig. 2; Pl. 1,1-2) originally identified by H. Schneider as geological alabaster[142] but now identified by W. Adler as calcium carbonate-based rock. Considering its size and the small depression in its upper surface, it must have been made for a small carinated bowl with a boss on the bottom; no such vessel was found in the 'Schatzhaus'. The bottom surface of the stand is absolutely flat, as on rougher 'gypsum' vessels the author has examined and I. Ben-Dor described, and unlike the hollowed-out trumpet feet on Egyptian vessels. The top surface has a hemispherical depression in it with a point mark in the center; both the top surface and the concave depression show drill marks. The lip and foot are carved quite precisely, although the whole is not especially fine. The almost featureless stone and flat bottom surface are not typically Egyptian.

138 P. Warren sees vessels as indicators of economic and political history, and of a special relationship between Knossos and Egypt. Yet, he also notes that the 'royal tomb' at Isopata was situated rather far from the palace to have the 'imported' vessels it did, and that tombs with 'Egyptian' vessels at Katsamba, Archanes, and near the Temple Tomb at Knossos were „surely not [for] the ruling authorities of the palace" (Warren 1989: 6-9).

139 Cf. most recently the study of L.V. Watrous, Review of Aegean Prehistory III, Crete from Earliest Prehistory through the Protopalatial Periods, in: American Journal of Archaeology 98, 1994, 695-753.

140 According to A. Miron (W. Adler, communication, November 2, 1994), two serpentinite vases and a limestone bowl (Miron 416) were analyzed petrographically by F. Rost (Department of Mineralogy, University of Saarbrücken) in about 1983, published below on pages 301-303; the remainder of the stone vessels were visually identified by H. Schneider (emeritus geologist of the University of Saarbrücken with Quaternary Age specialty). Two lids, four vessels, and the small stand have recently been tested by W. Adler with hydrochloric acid; fragments of one vessel were so tested by the author.

141 In this text vessels from Kāmid el-Lōz are cited by the number (e.g., Miron 420) given by R. Miron. For basic details and illustrations of the vessels, see Miron 1990.

142 And so published in Miron 1990: 97 no. 420 pl. 26.6.

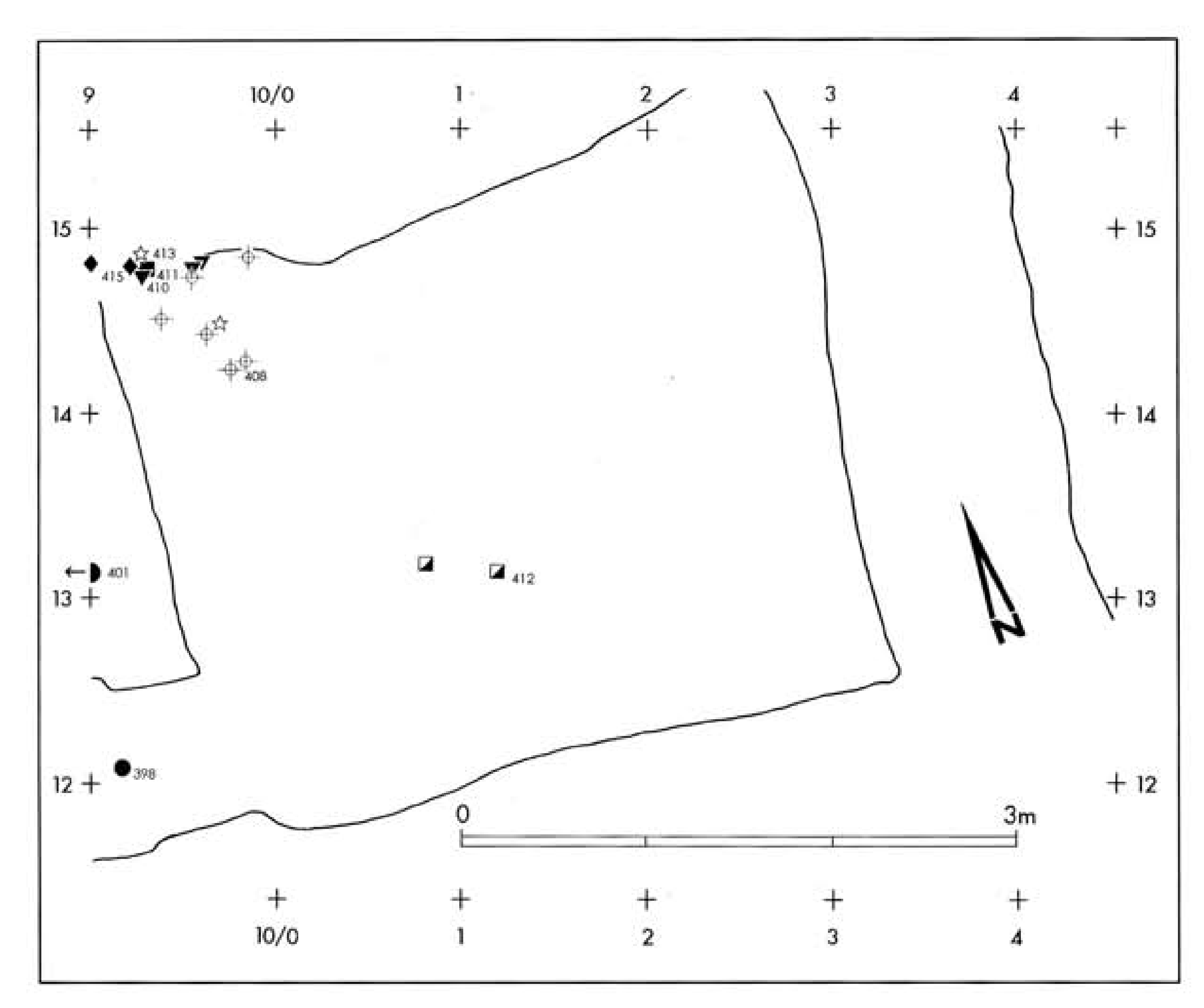
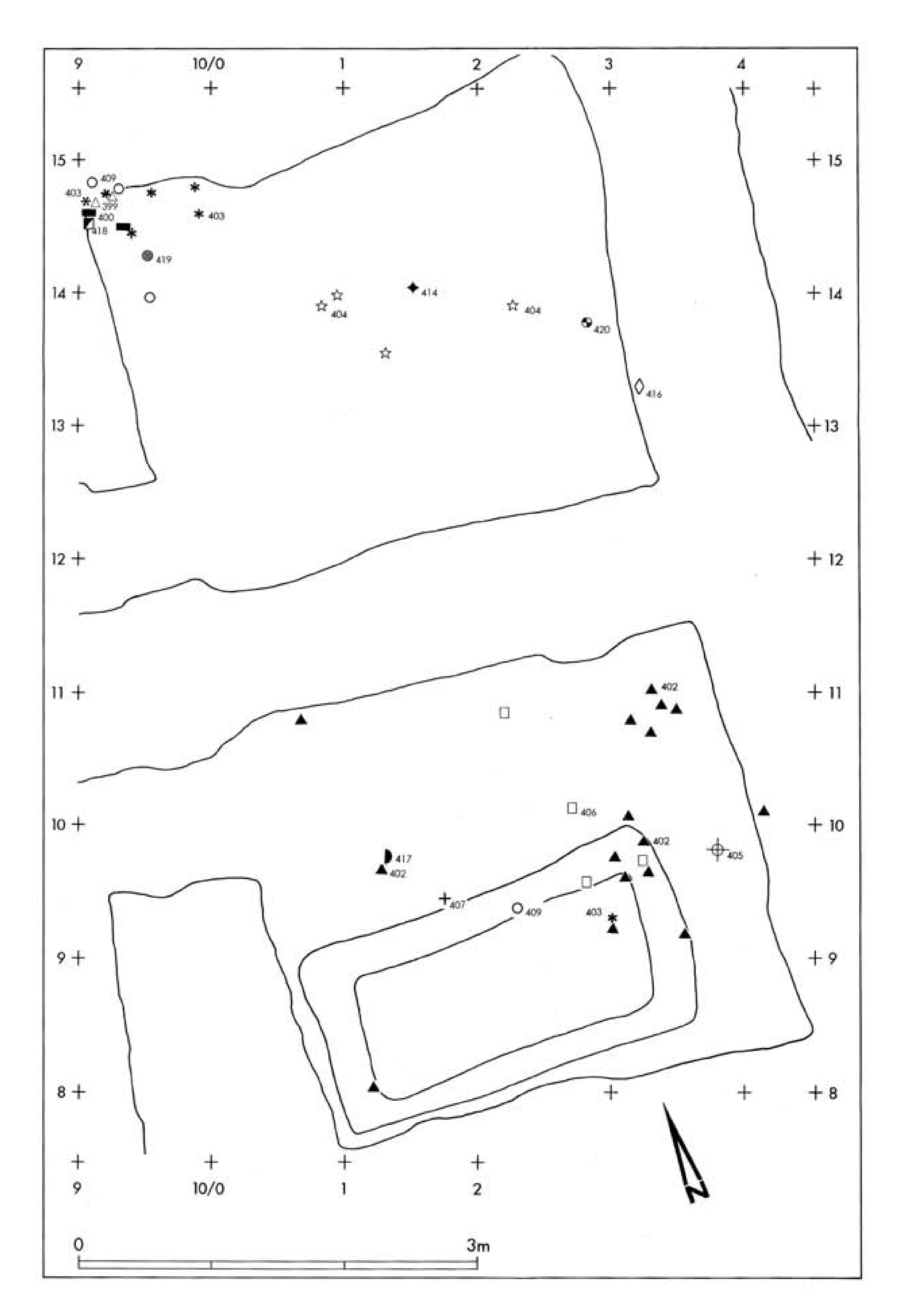


Fig. 1: Distribution of stone vessels in room S of the 'Schatzhaus' at Kāmid el-Lōz. The numbers are Miron Catalogue numbers. ●=Miron 398; ◗=Miron 401; ⌖=Miron 408; ▼=Miron 410; ■=Miron 411; ◩=Miron 412; ☆=Miron 413; ◆=Miron 415, vessel and lid. - cf. Fig. 2.

Fig. 2: Distribution of more fragmented stone vessels in Room S (north) and room T (south) of the 'Schatzhaus' at Kāmid el-Lōz. △=Miron 399; ▬=Miron 400; ▲=Miron 402; ✱=Miron 403; ☆=Miron 404; ⌖=Miron 405; □=Miron 406; +=Miron 407, lid; O=Miron 409, fragments and lid; ✦=Miron 414; ◊=Miron 416; ◗=Miron 417, lid; ◩=Miron 418, lid; ◎=Miron 419, lid; ◒=Miron 420. - cf. Fig. 1 and Adler fig. 13. ⇨

Two vessels are not Egyptian by shape: a flask and a ewer. The flask Miron 412 (Fig. 1; Pl. 16,1-3)[143] is of cream-colored calcium carbonate-based or calcareous rock with light banding (Adler); it is more opaque than translucent. The vessel stands 17.8 cm. high without lid, and its surface has the 'leached' look and strong, regular banding noted in Ajjūl vessels and Ebla baggy jars (Pls. 4,1-6; 5,1-3; 6,5-6). Along the narrow axis of this oval-shaped vessel (Pl. 16,3) the bands converge to form 'v's; B.C. Schreiber suggests that this configuration is the result of a fusion of two centers of growth as the rock formed. The inner curve of the small neck is rounded, while the point on the exterior where body meets neck is very slightly defined. The date is probably early Late Bronze age.

143 Miron 1990: no. 412 fig. 47 pl. 28.1; Frühe Phöniker: 133 no. 36 figs. pages 10 (color), 133.



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A ewer (Miron 408) is also of non-Egyptian shape and is again calcareous rock (Adler) with strong banding (Fig. 1; Pl. 17,1-3).[144] The trumpet-shaped mouth is like that on a pitcher from Mycenae (Pl. 8,4), and the handle is decorated with an incised cord in relief, as on a ewer from Mycenae (Pl. 7,1) and a jug from Knossos (Pl. 7,4). A fragment of a similar ewer was found at Hazor,[145] while remains of a gray-banded vessel from the Amman Airport may be from yet another example of this shape (Pl. 17,4). The date of the ewer is probably early Late Bronze, and the origin of its shape eastern Mediterranean.

A footed cup with collar rim Miron 415 (10.8 cm. high) is calcareous rock (Adler) (Pl. 18,1-2)[146] but not banded like the flask and ewer. The stone appears leached and also lacks the irregular banding, crystalline structure, or well-polished surface associated with vessels considered of more certain Egyptian manufacture. The shape resembles a cut-down high-necked jar, but in Egypt similar vessels were the result of breakage, they were not conceived as this shape.[147] Even Nubia yielded such broken jars as illustrated here[148] with a bag jar and high-necked jar,[149] and a juglet[150] from other Nubian graves (Pl. 18,3-4). The latter vessels are more roughly-shaped or less well-proportioned than the vessel from Kāmid el-Lōz. Without specialized chemical analyses, the manufacturing site of the Kāmid el-Lōz vessel is uncertain.

The shapes of the following three vessels are well-known in Egypt, as are several calcium-based and serpentinite lids (Miron 407, 417-19).[151] The calcareous material (author) of a piriform jar Miron 414 (18.2 cm. high, Pl. 19,1)[152] is similar to that of the footed cup just described. The stone of piriform jar Miron 413 (18.2 cm. high, Pl. 19,2-3)[153] has a better surface (not pitted) and is translucent and crystalline with orange veining; its shape is also more exact than the one in Plate 19,1. A good date for the vessel Miron 413 (Pl. 19,2-3) in Egypt would be Tuthmosis III; the vessel Miron 414 in Plate 19,1 could be slightly earlier. The type lasts at least to the time of Amenhotep IV(later Akhenaton).[154]

The proportions and shape of a large amphora (Miron 409) with horizontal loop handles (27 cm. high, Pl. 19,4-5)[155] also speak for Egypt and a date of Tuthmosis III;[156] it too is calcareous rock (Adler). The almost angular section of its handles is expected. Happily - because it is rarely the case - the vessel retains its broad lid.

Less surely 'Egyptian' is the jug Miron 410 (26.4 cm. high, Pl. 20,2-3),[157] if only because its stone - a nummulitic limestone (author), pitted from weathering - is rare in comparable Egyptian vessels. The size is similar to that of the calcareous amphora Miron 409 (27 cm. high, Pl. 19,4-5) and the serpentinite jug Miron 402

144 Miron 1990: no. 408 figs. 19, 54 pl. 27; Frühe Phöniker: 136 no. 42 figs. pages 11 (color), 136 no. 42.

145 Lilyquist 1994: 218.

146 Miron 1990: no. 415 fig. 52 pl. 28.2; Frühe Phöniker: 134 no. 39 figs. pages 53 (color), 135 no. 39.

147 J. Garstang, El Arabah (ERA 1900), London 1901, 14 no. E 178. pl. 19; Fragments of what may be a large stone bowl of our shape were found at Sedment: W.M.F. Petrie and G. Brunton, Sedment II (BSA and ERA 27th year, 1921), London 1924, 25f. no. 264, pl. 63.

148 MFA Boston 96/102.

149 MFA Boston 110/77 and /229.

150 MFA Boston 7/5/31.

151 The finest lid (Miron 418; calcareous according to W. Adler, like Miron 419; 11 cm. diameter) was made for a vessel with small hole (4.2 cm. diameter). The stopper has been ground down. On the basis of quality, the best piriform jar (Miron 413) would be a good candidate for this lid, although the lid would not come to the outer edge of the jar's rim.

152 Miron 1990: no. 414 figs. 22, 52 pl. 28.5; Frühe Phöniker: 134 no. 38 figs. pages 53 (color), 134 no. 38.

153 Miron 1990: no. 413 figs. 22, 52 pl. 28.4; Frühe Phöniker: 134 no. 37 figs. pages 53 (color), 134 no. 37.

154 Zivie 1990: 129.

155 Miron 1990: no. 409 fig. 48 pl. 26.7; Frühe Phöniker: 135 no. 41 figs. pages 23 (color), 135 no. 41.

156 See Chr. Lilyquist, The Gold Bowl Naming General Djehuty. A Study of Objects and Early Egyptology, in: Metropolitan Museum Journal 23, 1988, fig. 12.

157 Miron 1990: no. 410 fig. 20 pl. 23.2; Frühe Phöniker: 136 no. 43 fig. page 136 no. 43.

(26 cm. high, Pl. 26,1-2).[158] The neck is slightly forward on the body, but the workmanship and detailing is good. A fairly good parallel for the shape (with taller neck) is from the tomb of Maiherpri, from the time of Amenhotep II (Pl. 20,1).[159]

A much more squat calcareous jug (Miron 411) is also pitted from weathering (19.9 cm. high, Pl. 21,2).[160] Such jugs with round bodies are known in Egypt from about the time of Tuthmosis I onward,[161] but the depressed shape of the Kāmid el-Lōz example is not common, nor is its plain neck (no relief cords encircle it). In these respects the jug is similar to a vessel from Aniba (Nubia) which is even more weathered (Pl. 22,1).[162] The latter is from the University of Pennsylvania excavations, dated by the excavators 'Hyksos or early Dynasty 18.' The type is attested into the time of Amenhotep IV.[163]

A small serpentinite jug (Miron 404) from the 'Schatzhaus' at Kāmid el-Lōz has a yet more squat body, and it introduces Kāmid el-Lōz vessels of colored stone (12.2 cm. high, Pl. 21,1).[164] It has details that are quite crisp; there is fine rilling inside from a drill. The stone is mottled and appears leached; it is predominantly gray with areas of olive and blue (see F. Rost, Kāmid el-Lōz 16, 301; for analysis).

A piriform serpentinite pitcher (Miron 403) with separate stand (Pls. 22,2-4; 23,3-4; 24,1 bottom; combined height 24.3 cm.)[165] has more characteristics of Levantine work than the serpentinite jug just described. The neck is slightly forward on the body, the back juts out considerably (cf. Pl. 23,1-2 from Ajjūl), the knob base has obvious tool marks as does the stand, as on a vessel and stand from the Amman Airport (Pls. 15,1-2; 23,5-6). (See also a chlorite Early Minoan III-Middle Minoan I block vase from Crete with distinct drill marks, Pl. 23,7.) The original color is probably represented by an area of dark brown with slight olive tinge; dampness has probably created the light bluish gray in which the fine veining is more noticable. This vessel could occur in Egypt ca. Tuthmosis III-Amenhotep III(?), but its proportions and tool marks make it unlikely to have been made there. The button base in any event is uncommon in Egypt,[166] and such strong tool marks there are unknown to the author.

A serpentinite amphoriskos (Miron 405) was found in the 'Schatzhaus', without its separate base (21.5 cm. high);[167] the vessel is photographed in Plate 24,1 on the stand for the serpentinite pitcher. The size and material of this vase indicates that it could originally have been paired with that pitcher. Its button base has rilling, as does the flat vessel surface from which it extends (Pl. 24,3; cf. Pl. 22,3). The handles with protrusions below like duck heads (Pl. 24,2) herald the handles that appeared later on first millennium alabastra. The holes in these handles are drilled from both sides. This stone is a more speckled serpentinite than that just reviewed and is somewhat similar to that used for a small piriform jar from Megiddo (Pl. 14,4): it is mainly light olive with charcoal gray specks, and it is leached white on one side. The stone is similar to that used for an amphoriskos with 'duck' handles and self-stand from Nubia (Pl. 24,4-5);[168] a serpentinite amphoriskos from Ras Shamra is probably a bit later (time of Amenhotep III; Pl. 25,3).[169] From Ras Shamra also comes a crystalline amorphiskos with 'duck head'

158 Miron 1990: no. 402 fig. 49 pl. 23.1; Frühe Phöniker: 131 no. 31 figs. pages 52 (color), 131 no. 31.

159 For the dating see Chr. Lilyquist and R.H. Brill, Studies in Early Egyptian glass, New York 1993, 30.

160 Miron 1990: no. 411 pl. 24.2; Frühe Phöniker: 134 no. 40 fig. page 135 no. 40.

161 Later examples were found in the tomb of Cha; Schiaparelli 1922: figs. 120, 138.

162 SR 10872; very leached, 18.5 cm. high; Steindorff 1937: 144, 216 no. 15.

163 Zivie 1990: fig. 78, second from right.

164 Miron 1990: no. 407 pl. 24.1; Frühe Phöniker: 131 no. 32 fig. page 131 no. 32.

165 Miron 1990: no. 403 figs. 18,51 pl. 26.4; Frühe Phöniker: 132 no. 33 figs. pages 56 (color), 132 no. 33.

166 Because of its instability. For some examples from the tomb of Aper-el, see Zivie 1990: fig. 78, second and fifth from left; fig. 80, left (A.P. Zivie, communication, 1993).

167 Miron 1990: no. 405 figs. 18,51 pl. 25.1; Frühe Phöniker: 132 no. 34 figs. pages 56 (color), 132 no. 34.

168 MFA Boston 24-2-360, height 14 cm. Olive and black serpentinite, leached white; holes drilled through handles from both sides. Base cavity deep; fine rills and off-center ring. D. Dunham and J.M.A. Janssen, Semna Kumma (Second Cataract Forts 1), Boston 1960, 76 fig. 33 pl. 118,a.

169 Height 19.5 cm. See Zivie 1990: fig. 78, third from left, for an example from the tomb of Aper-el.

handles; it once had a separate stand (Pl. 25,1-2). This type of handle with 'pads' is not attested before the reign of Amenhotep II in Egypt[170] and continues at least until the reign of Amenhotep IV;[171] it also occurs in Crete (Pl. 25,4).[172] Altogether, the Kāmid el-Lōz amphoriskos might be dated about the time of Amenhotep II-Tuthmosis IV.

Two larger serpentinite vessels (Miron 402 and 406) were also found in the 'Schatzhaus' and can be paired together (as can several of the other Kāmid el-Lōz vessels). The jug Miron 402, happily preserved with matching lid (26 cm. high, Pl. 26,1-2), is made of an ivory-olive stone with gray spots. Carved with good detail (its base slightly concave), its proportions are 'classic' Egyptian, like a serpentinite amphora in Cairo with handles to neck (Pl. 26,3).[173] Its body is more rounded than the nummulitic limestone jug Miron 410 (26.4 cm. high, Pl. 20,2-3), and it lacks the relief cords around the neck, as an example from the Amenhotep IV-period tomb of Aper-el (Pl. 26,4) that has a less crisp handle.[174]

Not so the large amphora with self stand Miron 406 (Pl. 27,1-3; preserved height 28.7 cm.), the largest-scale 'Schatzhaus' vessel of all.[175] This stone is a grayish green (see F. Rost, Kāmid el-Lōz 16, 301; for analysis.). The neck is wide, the stand thin, the body bulbous. But rather than handles on the side of the vessel (as on Canaanite amphoras), or from shoulders to top of neck (as in Pl. 27,4, from the tomb of Tutankhamun), the handles here loop to the shoulders in a mannered quality that constrasts with the rather broad detailing of the raised band between body and stand Miron 406 (Pl. 27,1).

The date of these two large Kāmid el-Lōz serpentinite vessels is probably not before Tuthmosis IV, if Egyptian evidence is used. The place of manufacture, however, is not clear. The vessels are well made, but there are few large-scale serpentinite vessels in Egypt with which to compare them. Furthermore, the mannered line of the handles, with curved ends, recalls the representations of foreign vessels in Egyptian tombs.[176] Unfortunately, the bottom surface of the amphora's stand is entirely broken away, losing technological information. These vessels are of high quality. In the author's opinion the serpentinite amphora (and therefore the jug) could be a Syrian product, and should be the latest vessel in the tomb.

The final vessel to be described from the 'Schatzhaus'[177] is a jar (Miron 398) inscribed for the *ḥ3ty-ʿrʿ-wsir* (15.9 cm. high, Pl. 28,1-3).[178] The stone has a black matrix with waxy green-white-pink inclusions; H. Schneider suggested from a photograph that it might be diorite. The excavators noted that it was the only vessel in the complex whose inner surface was polished; the surface is pitted, however, not smooth like glass.

Elsewhere, reasons of shape, finish, and paleography have been given to indicate that the jar is a local product, inscribed for a dignitary buried in the 'Schatzhaus.'[179] To those considerations[180] can now be added evidence from Egypt showing that vases of 'Archaic period shape' have a long history of production and use in

170 Lilyquist 1995.

171 Zivie 1990: 129.

172 Described as a Dynasty 18 vessel from Egypt (note that the lower half is restored); 34.2 cm. high.

173 SR 10913, from Loret's work; 21.5 cm. high. The stone is olive and camel with black veins; it has a gray bloom.

174 Height 25.5 cm. Photo MAFB/A. Lecler, with the authorization of the Mission archéologique française du Bubasteion (Saqqarah).

175 Miron 1990: no. 406 fig. 49 pl. 25.2; Frühe Phöniker: 133 no. 35 figs. pages 52 (color), 133 no. 35.

176 J. Vercoutter, L' Égypte et le monde Égéen préhellénique (Bibliothèque d' Étude 22), Cairo 1956, *passim*. P.R.S. Moorey suggests that upturned handles are a sign of a metal prototype (communication, September 1990).

177 The author did not examine Miron 416, a shallow limestone bowl (see F. Rost, Kāmid el-Lōz 16, 302; for analysis); its simple shape, ring foot and stone type indicate that it should be a local product.

178 Miron 1990: no. 398 figs. 16, 50 pl. 24.3; Frühe Phöniker: 130 no. 30 figs. pages 49 (color), 131 no. 30.

179 Lilyquist 1994: 217.

180 Further on the title, see R.J. Leprohon, Administrative Titles in Nubia in the Middle Kingdom, in: Journal of the American Oriental Society 113, 1993, 425.

Egypt, and that vessels of hard stone were included in Tuthmosis IV's burial equipment.[181] In fact, hard stone vessels occur in Egyptian contexts of all dates.[182]

In contrast to this complete hard stone jar from the 'Schatzhaus' is a fragment of a jar (KL 80:10) found outside that building (Pl. 29,1-2);[183] it concludes the Kāmid el-Lōz vessels reviewed here. This fragment appears to be from an Egyptian vessel of the Archaic period (height of inscribed band, about 2.5 cm.).[184] The stone has a black matrix with ivory-colored phenocrysts and round olive-colored inclusions; the polished surface is somewhat pitted. The outer point of the rim is missing; the mouth curves smoothly to the top of the rim.[185] The inscription also appears to be Egyptian, although, curiously, there is no parallel for it in Egypt from the Archaic period:[186] only small panel-format inscriptions are attested on a few vases for kings at that time. The fact that it is a hard-stone fragment aligns it with pieces found at Ras Shamra, Crete, and elsewhere - fragments which could have reached foreign lands at the end of the Middle Kingdom (see below).[187] Further study is needed to propose a date for its inscription.

Determining the provenance of the stones could theoretically determine whether the Kāmid el-Lōz vessels are local or imported. Without it, we must take the evidence and knowledge that exist; and the most straightforward interpretation is that the vessels of the 'Schatzhaus' are mainly locally made (i.e., Syria-Palestine), with several possible Egyptian imports, such as the piriform jar Miron 413 (Pl. 19,2) and amphora Miron 409 with horizontal handles (Pl. 19,5). The material and details of the calcareous stand Miron 420 (Pl. 1,1-2) are not Egyptian; the shapes of the flask Miron 412 (Pl. 16,2-3) and the large ewer Miron 408 (Pl. 17,1-2) belong in the Levant, while their stone - with widely-spaced regular bands - occurs in countless vessels there. The heavy drill marks and proportions of the small serpentinite vessels and stand Miron 403 and 405 (Pls. 22,2; 23,3-4; 24,1) are not Egyptian traits. The ewer's size (Pl. 17,1) implies a craftsman who had skill; the same skill could have produced the nummulitic limestone jug Miron 410 (Pl. 20,2), large serpentinite jug Miron 402 (Pl. 26,2), and sizable amphora Miron 406 with self stand (Pl. 27,1). The hard-stone inscribed jar Miron 398 (Pl. 28,1-3) is generic enough to have been made locally; perhaps it is a response to the inscribed fragment (KL 80:10) found outside the 'Schatzhaus' (Pl. 29,1-2).[188] The quality of work in the softer stones is higher, and fits with other locally made luxury goods found in the 'Schatzhaus.' If there were a few imports from Egypt, it would not be incongruous, given the rich nature of the 'Schatzhaus' objects.

The stone vessels in the 'Schatzhaus' were essentially complete except for the two large serpentinite vases Miron 402 and 406 (Fig. 2; Pls. 26,2; 27,1); they lacked a third to a half of their masses (there were small incisions next to a fault line on the jug). All of the Kāmid el-Lōz vessels have a leached appearance; a piece of the handle for the small serpentinite pitcher Miron 403 (Pl. 22,4) shows how much darker its original color would have been. From the condition of the stones of these Kāmid el-Lōz vessels, it is no wonder that no traces of contents were noted.

181 Tuthmosis IV also had a serpentine example, and Amenhotep II a calcareous one.

182 See Lilyquist 1995, Introduction, with footnote 76. The shoulder of a large unprovenanced jar in the MMA, with a royal titulary in a band, is thought to be Middle Kingdom (old cat. 3001A); a seventy-deben weight from Lisht North Pyramid cemetery 497 (MMA 15.3.233), inscribed „(Senwosret), given life forever," has been identified as both porphry and rhyolite (obsidian); a gabbro fragment inscribed with the titles of a private official is from the North Pyramid cemetery *radim* at Lisht (09.180.541).

183 Frühe Phöniker: 158 no. 98 fig. page 39.

184 Frühe Phöniker: 38f. fig.16.

185 Thickness of wall 1.8 cm. at curve, 1.6 cm. at lower tip. Rilling on inner surface.

186 A vase from an Old Kingdom mastaba at Edfu has Teti's titulary circling the rim, see B. Bruyère, K. Michalowski, et al., Tell Edfou 1937 (Fouilles franco-polonaises, rapports 1), Cairo 1937, pl. 17.

187 Note that Herakleion 2092 (Warren 1969: 108 type 43 A 1, unstratified deposit northwest of Knossos Palace, gabbro predynastic Egyptian bowl) is a small fragment rather than a complete bowl; even the edge of the rim may not be preserved.

188 Of some interest is a locally made Minoan-style pot found in a contemporary Nubian tomb for a *ḥ3ty-ʿ*, see Lilyquist 1994: 217.

4 CONCLUSION

Amenhotep III wrote to Burnaburiash in Babylon that he was sending - as dowry for the Kassite king's daughter - at least 1,000 stone vases filled with 'sweet oil,'[189] nine or ten containers filled with oil, and more than 160 empty stone vessels.[190] Obvious as it might seem that these vessels were Egyptian, three of the nine specific names for them are foreign, prompting J. Hoch, in a remarkable study of Semitic words in New Kingdom texts, to state that „it appears that [at least one of them was] imported and also sent out of the country."[191] One should also note that the Thutmosis III Annales describe stone brought into Egypt: *mnw*- stone from Syria (quartz?) and a great block of white stone from Hatti.[192]

How many vessels traveled from Egypt? The gray stone jar belonging to the *ḥ3ty-ʿ* Ipshemu-abi in Byblos tomb 2 is nicely inscribed 'Amenemhat,' but there are other features which make this vessel's history uncertain.[193] The inscription on a veined gray stone jar found in Granada and naming the Hyksos princess Tawat is credible, but the vessel presumably got to Spain in the first millennium.[194]

Dedication to temples seems to have prompted some stone-vessel travel. Several vessels inscribed with the names of Archaic and Old Kingdom kings were found in temples naming Hathor at Byblos, and some of the fragmentary inscriptions are especially well-carved.[195] (When they got to Byblos is, of course, another question.) The temple of Hathor in the Sinai had New Kingdom vessels and fragments.[196]

And there is trade. Fragments of what was probably a complete gneiss lamp inscribed for Chephren were excavated at Ebla in the Palace G, dating to the end of the third millennium B.C.[197] As the context post-dated Chephren and as the area yielded raw chunks of lapis lazuli, G. Scandone Matthiae was inclined to see the vessel as an item of trade. So also might be the obsidian rim fragment found at Knossos;[198] the Near East,[199] Egypt, and even Anatolia[200] could be possible sources if not the Aegean. In fact, jars of colored stone in 'Archaic' shapes

189 W.J. Moran states that in the Old Babylonian period the term applied to „the best beer plus a wide range of aromatics, dates, figs, and other substances:" W.J. Moran, The Amarna Letters, Baltimore 1992, 35 n. 9. The most commonly named container here is *ku-ku-bu*, which is defined in A.L. Oppenheim, et al. (eds.), The Assyrian Dictionary 8, Glückstadt 1971, 499, as „a small container serving as alabastron, libation jar, and drinking flask."

190 Amarna text EA 14 III 34-73 *passim*.

191 J.E. Hoch, Semitic Words in Egyptian Texts of the New Kingdom and the Third Intermediate Period, Princeton 1994, 464f. nos. 36. 198-99. 392. They could have already been sent into Egypt, made in Egypt by Egyptians, or made in Egypt by foreign craftsmen.

192 J.H. Breasted, Ancient Records of Egypt. Historical Documents 2, The Eighteenth Dynasty, Chicago 1906, nos. 485, 491, 509. See J.R. Harris, Lexicographical Studies in Ancient Egyptian Minerals (Berlin, Akademie der Wissenschaften, Insitut für Orientforschung, Veröffentlichung 54), Berlin 1961, 110f. Note too T.F. Potts 1989: 126, 144f., 148 who states that for Mesopotamian stone vessels which were obtained as booty and subsequently inscribed and dedicated, „inscriptions do not guarantee that these vessels, less still all those of the same forms, were *manufactured* in the regions specified."

193 Montet 1928: no. 614; made of 'pierre grise.' Unusual features of this vase, from Byblos tomb 2, are its domed lid, 'pot mark,' and repair in the same stone. See Lilyquist 1993: 41-44 on the dating of the tombs in general.

194 Lilyquist 1995: no. 4; not examined by author. There is Phoenician material excavated in the area; but note the amphora in J. Padró i Parcerisa, Egyptian-type Documents. From the Mediterranean Littoral of the Iberian Peninsula before the Roman Conquest, 3. Study of the Material, Leiden 1985, 78.

195 M. Dunand 1939: pls. 36-39; P. Montet 1928: pl. 39.

196 Petrie and Currelly 1906; Leeds 1922.

197 Scandone 1988.

198 Warren and Hankey 1989: 125.

199 Moorey 1994: 40-42, 70.

200 Examples have not been excavated; Troy, Açem Hüyük, and Kültepe would be possible sites. Tepe Gawra had trade links with Anatolia. Communication, M. Mellink, March 29, 1995.

have been found in Egyptian contexts of many periods, their stones were worked after the Old Kingdom, and 'Archaic' shapes probably continued to be made later too.[201] But whole vases of convincing Egyptian character are rare outside Egypt (cf. chapter 5.2), in contrast to the fragments of hard variegated stone found in the Aegean and Levant. Perhaps in the Second Intermediate period such fragments were traded: W.M.F. Petrie found them at the Hyksos Delta site of Tell el-Yahudiyeh,[202] and G.A. Reisner found them in Classic-period burials at Kerma.[203]

What about the numerous examples of whole calcareous jars in Palestine, finer quality fancy forms at Ras Shamra, and sizable creations in Crete? Were whole vessels shipped for their beauty? Was raw stone exported from Egypt? Were masses of modest vessels sent as a commodity? Or can any vessels be explained as royal gifts which were handed on to the greater populace?

The Minoan and Mycenaean rulers would have qualified as worthy recipients for vessels as status gifts. But the vessels in question do not represent a single period, and to this Egyptologist, the 'Egyptian' component is very weak in vessels from the Zakro and Knossos treasuries, while a Syro-Palestinian style is quite strong in light stone vessels from the Mycenaean shaft graves (as in the vessels from Isopata, Pl. 3).[204] Furthermore, as far as we can tell, Greece and Crete did not participate in the diplomatic exchanges of the Amarna correspondences. As it is, some vessels come from modest findspots.[205]

In any event, whole stone vessels would be heavy, as would blocks of stone; weight would be a consideration in any overland transport. B.C. Schreiber[206] likens the undesirability of transporting blocks or raw stone to that of transporting bags of cement today: it is cheaper to heat limestone rock, crush it, and powder it into cement locally than to ship it any appreciable distance. In other cultures where stone was valuable for a particular use outside its source - for example, flint for knives in Native American populations - cores were prepared at the gathering site before shipment, so that the condition of the flint could be certified. To Schreiber, it would seem more logical to use local stones (such as those available throughout the Mediterranean) unless there is a very specific stone desired, like semi-precious lapis lazuli. One must also wonder at the likelihood of Egyptians quarrying stone in Middle Egypt and sending blocks of it by Nile boats to seafaring crafts in the Mediterranean which would take them to coastal ports for eventual distribution overland.[207]

Would stone vessels have traveled for their contents? The 'sweet oil' need not have been oil, nor can it be said that the oils and resins in Egypt were particularly exotic; Egypt normally wanted such organics from elsewhere. But in any event, judging from Greece, Cyprus, and the Levant, pottery was the more common medium in which to transport such substances. And an even more convenient means of transport has been suggested by P.R.S. Moorey. In finding the bag shape illogical for stone, he has suggested that its origin might have been in leather: the shape is right (as for small ovoid flasks), the material is light-weight, and its traces would normally have disappeared.[208]

In conclusion, upon consideration of the size and style of some specimens, the numbers of modest examples, the availability of regional stones, and the question of Egypt as a trading partner, local production of stone vessels

201 Lilyquist 1995, Introduction.

202 Petrie 1906: 14 § 17 pl. 1.

203 Reisner 1923, MFA Boston 14-1-1159 and 14-2-647; D. O'Connor, The locations of Yam and Kush and their Historical Implications, in: Journal of the American Research Center in Egypt 23, 1986, 50.

204 In Evans' S.3-6, and 9 (the rim of the latter is restored); for a parallel to the jug S.2, see Miron 410 [Pl. 20,2]. Only a small bit of the neck of S.10 is preserved, thus making it difficult to comment on it. The bridge-spouted jar is, of course, a Minoan shape; see also the comment on Herakleion 611 in chapter 5.1. Thus, all the Isopata vessels could be non-Egyptian.

205 Warren 1991b: 299; Evely 1984; Caubet 1991: 216-18.

206 B.C. Schreiber, communication.

207 For finished examples that have come to the author's attention, see chapter 5.1 and the forthcoming dissertation of R. Sparks, Stone Vessels in the Levant in the Second Millennium B.C., University of Sydney.

208 P.R.S. Moorey, communication, 1990.

from local sources of raw material makes more sense than seeing numerous Egyptian stone vessels or blocks of stone sent throughout the Ancient World. Thus, until such specifics as rim shape, body proportion, and use of specific materials (based on better geological and archaeological knowledge) are more advanced; until the resultant typologies are well-illustrated and based on critically reviewed excavations; and until the relative chronologies of Egypt and her neighbors are more certain, it is problematic to use stone vessels as indices of trade or chronology.

In the meantime, what can be proposed for the remains that have been reviewed here? The author provisionally suggests that Palestine produced the calcareous stone vessels I. Ben-Dor assigned to Egypt;[209] Syria produced marble-like stone vessels;[210] and Syria produced serpentinite jars for Ras Shamra and other sites. Some of the latter might have been produced near Amman (Pls. 15,1-2; 23,5-6); Nubia, with its serpentinite, could have produced others (Pl. 24,4-5). Among the light vessels are gray-banded[211] and cream-colored specimens.

It also seems reasonable to propose that the Aegean produced the gray-banded examples from Zakro (Pl. 9,3-5), the vessels of yellowish, waxy-looking stone, and the vessels of opaque marble-like white stones. Cyprus probably made its own vessels.[212] And whoever had dark variegated stones produced simple jars.

Beyond that, the role that Egypt played in the creation of techniques and shapes, and in the supply of craftsmen, is not yet clear. For while it is agreed that Egypt acquired the shape of the jug in Plate 20,1 ultimately from Cypriot Base Ring pottery, the genesis of Egypt's piriform jar and other shapes is not sure.[213] By the Amarna age, contact between cultural areas was extensive, and C.L. Woolley's reference to a common Middle East *koinê* is of interest, but there is still much to learn about the pre-Amarna period, when those contacts were being developed. Is the reason for the similarity of some Kāmid el-Lōz and Nubian vessels the fact that they are both from peripheral locations? Or is the better quality of Egyptian examples simply evidence of Egypt's fine stone and longer history working it? If the Kāmid el-Lōz amphora with upswung handles was made in the Levant, should we determine its date via extant vessels found in Egypt? If some Egyptian stone vessels were inspired by pottery shapes containing oils or medicines from the north, are we correct in calling the type Egyptian/Egyptianizing? How large an area should we consider 'ancient Egypt' to have been? These questions may ultimately be answered, but until then, a conservative stance is more appropriate. Chronological frameworks may or may not be affected, but cultural understanding should be improved.

209 Perhaps from rock in the Sinai? See the very regular banding of a sandstone block statue from there. H.T. Bossert, Altsyrien. Kunst und Handwerk in Cypern, Syrien, Palästina, Transjordanien und Arabien von den Anfängen bis zum völligen Aufgehen in der griechisch-römischen Kultur (Die ältesten Kulturen des Mittelmeerkreises 3), Tübingen 1951, 63f., 251.

210 As examples from Ras Shamra and Alalakh.

211 Herakleion 343 from Aghia Triadha (Warren 1969: 112 type 43 I, 'Dynasty 18 Egyptian alabaster alabastron').

212 B.C. Schreiber, G. Testa, and the author inspected eight calcareous and one gypsum rock vessels from the Cesnola collection in the Greek and Roman Department of the Metropolitan Museum. Of the eight, 74.51.5111 was of Palestinian type; 74.51.5085, .5110, .5114, .5121, .5124, .5139 were of stone and details Schreiber and the author considered of Cypriot type; and 74.51.5107 seemed 'Egyptian' to the author in all respects *except* for its solid, flat bottomed foot.

213 Lilyquist 1995, Introduction.

5 APPENDICES

5.1 OBSERVATIONS ON SELECTED VARIEGATED STONE VESSELS

(Listed below are miscellaneous vessels not cited in the paper)

5.1.1 Local Products (?)

Aghia Triadha

Cylindrical jar, Herakleion 666 (Warren 1969: 111 type 43 G 4, large tholos, 'Chephren variety diorite, Egyptian import'). This jar does not have the smoky translucency commonly associated with the stone cited.[214] Nor is it certain that a date of 'Dynasty 6 or earlier' is correct for the unusual vessel with which this jar is compared (CG 18419). Because of its straight shape, material (red limestone breccia), and decoration (*ankh*-sign incised on wall, cross on base), the Cairo vessel would seem no earlier than the Second Intermediate period.[215]

Archanes

Squat diorite jar, Herakleion 3050 (Warren 1969: 111 type 43 D 3, 'diorite Egyptian vessel').[216]

Beth Shan

Squat jar, University Museum 29-107-380 (Rowe 1940).

Byblos

Squat diorite jar, Louvre AO 11607 (Montet 1928: no. 78).

Isopata

Porphyritic rock carinated bowl, Herakleion 611 (Warren 1969: 111 type 43 G 2, 'porphyritic rock, Egyptian vessel'). A. Evans suggested *lapis lacedaemonius*, as blocks found in the Palace and „worked into a later wall in the Domestic Quarter;"[217] there are patches of gray in the black, and fine green lines in white phenocrysts. Another vessel should be considered here: Athens NM 7392, a tall jar of dark stone with ivory phenocrysts. The matrix is dark green on the bottom part and black on the upper. Three sets of holes edge the rim, each pair side by side; gouges are visible on the inside of the mouth. Further, the patterning of the stone is very similar to that on a 'rhyton' from Zakro, of *lapis lacedaemonius* according to Warren 1969; here Pl. 11,2.[218]

Kāmid el-Lōz 'Schatzhaus'

Inscribed jar (Miron 398). See text (p. 154) for discussion.

Knossos

Squat jar, Ashmolean 1910.201 (Warren 1969: 109 type 43 A 2, unstratified deposit northwest of Palace, 'gabbro Egyptian vessel').

Squat jar with lug handles, Herakleion 56 (Warren 1969: 109 type 43 A 7, N.F.C.,[219] 'syenite Egyptian vessel').

214 The stone of the User statue in Herakleion is similar to it, as, seemingly, an anorthosite rock from Ras Shamra (Querré et al. 1991: 84 AO 400).

215 Cf. Lilyquist 1995, Introduction.

216 J.A. Sakellarakis; and E. Sapouna-Sakellaraki, Archanes, Athens 1981, fig. 85.

217 Evans 1905: 536.

218 According to Warren 1969: 87 type 34 B 1; Herakleion 2712.

219 Warren 1969: 4. 'no recorded or published find context'.

Knossos, fragments only

Part of a bowl with spout, Ashmolean AE 1923.38 (Warren 1969: 112 type 43 G 5, N.F.C., 'presumably Egyptian and Predynastic - Early Dynastic because of material'). Workmanship known in Roman period but shape of original artifact, and possibly stone, not Egyptian.

Wall fragment, Ashmolean 1938.653 (Warren 1969: 109 type 43 A 10, upper level of Late Neolithic house, 'no parallels for material from Egypt but if from Egypt, late Predynastic - Early Dynastic'). Stone not dynastic Egyptian.

Ras Shamra

Squat jar with slight protrusions, Latakia '52.'

5.1.2 Origin unclear

Knossos, fragments only

Carinated bowl sherd, Ashmolean AE 2301 (Warren 1969: 111 type 43 E 5, N.F.C., 'Dynasty 4-6 Egyptian bowl fragment'). This well polished fragment is translucent white with black markings, like andesite gneiss, but the author has not noted dark green spots in any Egyptian objects.

Rim fragment of carinated bowl, Ashmolean AE 1941.1254 (probably Warren 1969: 110 type 43 C 2, 'diorite fragment of an Egyptian bowl').

Mycenae

Tall diorite jar with lug handles, Athens NM 2919 (Warren 1969: 114 type 43 B, chamber tomb 55, 'diorite Egyptian vessel'). Rim flaccid; stone brown, black, and white.

Tell Yoqneam

Tall diorite jar (A. Ben-Tor 1970); judgement based on photograph.

Zakro

Fluted jar and spouted jar, Herakleion 2695 and 2714 (Warren 1969: 109 type 43 A 3 and 8, 'porphyritic rock, Archaic period vessels from Egypt, reworked by Minoans'). These jars from Zakro are unusual in several respects. A *red* porphyry with both large phenocrysts and tiny hairlike lines in the matrix is not known in Egypt to the author or to D.D. Klemm and R. Klemm:[220] the Dynasty 1 vessel from Naqada quoted by P. Warren[221] is reddish owing to fire, as are most of the vessels from this tomb.[222] R.D.G. Evely gives some evidence for Minoans using heat to intentionally change the color of stone,[223] and the two Zakro jars are partially dark gray. Furthermore, a Zakro 'rhyton' made of *lapis lacedaemonius*[224] is colored a similar reddish brown, owing to burning according to Warren (1969: 133). But since other objects from the Zakro treasury do not show traces of fire, and since the clay spout matches the red color of Herakleion 2695's stone, such treatment would have to have been effected before completion. There is a tall lugged jar in the Egyptian Museum, Cairo, of black porphyry with large phenocrysts and hairlike threads;[225] perhaps this was the original appearance of the Zakro jars. J. Phillips has an ingenous reconstruction for Herakleion 2714;[226] its small mouth and disk base are to be noted however. If the jars were indeed reworked from Egyptian vessels of the Archaic period, it is remarkable that two containers of the same stone and of similar size would have reached Crete to be reworked at the same time in the Late Minoan period.

220 D.D. Klemm; and R. Klemm, communication, June 1989.

221 CG 11935: J.E. Quibell, Archaic Objects (Catalogue général des antiquités Égyptiennes du Musée du Caire nos. 11001-12000 et 14001-14754), Cairo 1905.

222 Kindly confirmed by D.D. Klemm; and R. Klemm, communication, February 28, 1990.

223 Evely 1993: 178.

224 According to Warren 1969: 87 type 34 B 1; Herakleion 2712.

225 CG 18147, no provenance.

226 Phillips 1991b: nos. 92-93.

5.1.3 More Convincing as Egyptian

Beth Shemesh (level IV, Late Bronze age)[227]
Squat jar with lug handles, University Museum 61-14-1680 (Grant 1939: 160f.).

Fragment of bowl, University Museum 61-14-1770 (Grant 1939: 160f.).

Katsamba
Diorite squat jar with lug handles, Herakleion 2410 (Warren 1969: 109 type 43 A 4, 'diorite Egyptian bowl').

Knossos (fragments only)
Black and white shoulder fragment, Ashmolean AE 2302 (Warren 1969: 110 type 43 B 2, 'porphyritic fragment of an Egyptian jar').

Porphyry wall sherd, Ashmolean AE 2303 (Warren 1969: 110 type 43 C 3, unstratified deposit northwest of Palace, 'porphyritic fragment of Egyptian bowl').

Ras Shamra
Diorite squat jar with lug handles, Damascus.

Porphyry squat jar with lug handles, Aleppo M 5378.

Ras Shamra (fragments only)
Louvre 84 AO 499 (Querré et al. 1991: 246).

Louvre 84 AO 866 and 867 (Caubet 1991: 235).

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Ward 1963
Yon 1991

MISCELLANEOUS GEOLOGICAL
*Borghini 1989
*Galetti et al. 1992
*Rost 1994
*Waelkens 1990, 1992
*Waelkens et al. 1992
*Williams-Thorpe and Thorpe 1991

Sources with geological information are starred (*).

5.4 ABBREVIATIONS

AASOR = Annual of the American Schools of Oriental Research

ALECSO = Arab League. Educational, Cultural and Scientific organization

BSA = Annual of the British School at Athens

BASOR = Bulletin of the American Schools of Oriental Research

BSA[E] = British School of Archaeology [in Egypt]

BSEA = British School of Egyptian Archaeology

CG = Catalogue général des Antiquités égyptiennes du Musée du Caire, a publication project for objects in the Egyptian Museum, Cairo; not all objects numbered have been published

ERA = Egyptian Research Account

HM = Herakleion Museum

IGME = Institute of Geology and Mineral Exploration, Athens, 1:50,000 sheets (not seen)

JdE = Journal d'entrée of the Cairo Museum

JEA = Journal of Egyptian Archaeology

MFA = Museum of Fine Arts, Boston

MMA = Metropolitan Museum of Art

N.S. = New Series

OIP = Oriental Institute Publications

RDAC = Report of the Department of Antiquities, Cyprus

SAE = Service des Antiquités égyptiennes

SIMA = Studies in Mediterranean Archaeology

SR = Special Register, an inventory of the objects in each section of the Cairo Museum, made by the keeper of that section; understood to have been compiled in the 1960's, beginning in 1963

VK = Valley of the Kings

For further abbreviations see pp. 305-306.

Acknowledgements

For access to objects (including photography by the author and Bill Barrette) and to records from excavations, the author gratefully acknowledges the following individuals: *Aleppo, museum*: Wahid Khayata, Radwan Sharaf, Nadjwa Basmadji; - *Amman, museum*: Ghazi Bisheh, Siham Balqar; - *Amman Airport excavations*: Basil Hennessy, Vronwy Hankey, *British School of Archaeology in Jerusalem*; - *Antakya, museum*: The Director; - *Athens, National Museum*: Katie Demakopoulou, Jannis A. Sakellarakis; - *Boston, Museum of Fine Arts*: Rita Freed, Peter Lacovara, Timothy Kendall; - *Cairo, Egyptian Museum*: Mohammed Saleh, Mohammed Mohssen, Galal Sharawy, Adel-Mahhmoud Mohammed; - *Chicago, Oriental Institute Museum*: Karen Wilson, Ray Tindall; - *Damascus, museum*: Ali Abu-Asaf, Loris Chahla; - *Herakleion, museum*: Charalampos B. Kritzas; - *Jerusalem, Rockefeller and Israel Museums*: Tallay Ornan, Ornit Ilan, Nitzan Amitay-Preiss, Miriam Tadmor; - *Kāmid el-Lōz excavations*: Rolf Hachmann, Renate Barthel, Wolfgang Adler; - *Larnaca, museum*: Ino Nikolau, Andreas Sala; - *Latakia, museum*: Nadjwa Khaski, Mohammed Djerad; - *London, British Museum*: Jonathan Tubb; - *New York, Metropolitan Museum of Art:* Prudence O. Harper, Joan R. Mertens; - *Nicosia, museum*: Ino Nikolau; - *Oxford, Ashmolean Museum*: P.R.S. Moorey, Michael Vickers, Helen Whitehouse; - *Paris, Musée du Louvre*: Annie Caubet; - *Philadelphia, University Museum*: Maude de Schauensee, Patrick McGovern, David Romano, Philip Betancourt, David O'Connor, Richard Zettler, Linda Bregstein; - *Tell Mardikh excavations*: Paolo Matthiae, Stefania Mazzoni.

For expertise and references, the author is grateful to the following colleagues: Marie-Henriette Gates; Paul Goldberg (*Texas Archaeological Research Laboratory, University of Texas at Austin*); James A. Harrell (*Department of Geology, University of Toledo*); Barbara Kleinmann; Dietrich D. Klemm (*Ludwig-Maximilians-Universität, Munich*), and Rosemarie Klemm; Günter Kopcke; Thomas McClellan; Richard Newman (*Museum of Fine Arts, Boston*); Joan Oates; Alan Peatfield, and Peter Day (*British School at Athens*); B.C. Schreiber; Walter Pitman, and William Ryan (*Lamont-Doherty Earth Observatory*); Giovanni Testa (*University of Pisa*); Peter Warren; James Weinstein.

And for research, production, and editing, the author is grateful to: Thea Politis of the *Lila Acheson Wallace Curatorship in Egyptology*, and Barbara Ibronyi of *Barbara Ibronyi Enterprises*. The librarians at the *Thomas J. Watson and Charles Edwin Wilbour libraries of the Metropolitan and Brooklyn Museums* supplied many references.

Travel was made possible by *The Metropolitan Museum of Art* through a Professional Travel grant, *Adelaide Milton de Groot funds in memory of the de Groot and Hawley families*, and *Whitney funds* through permission of the Director, Philippe de Montebello.

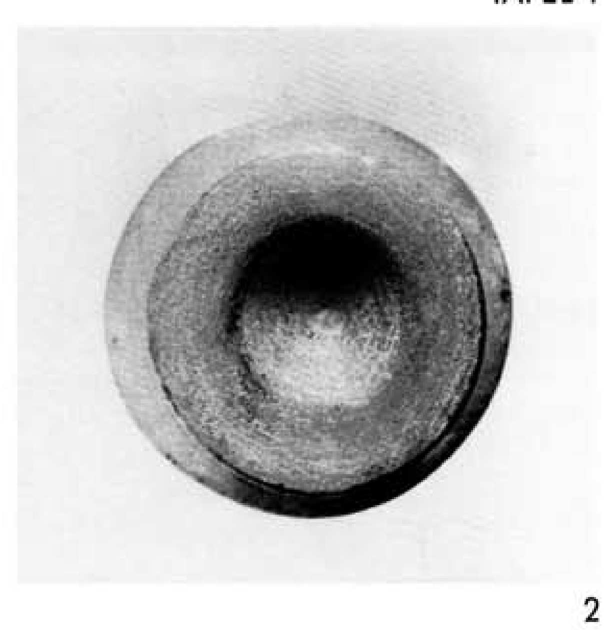
1-2 = Calcareous rock stand, KL 78:1205; Kāmid el-Lōz, 'Schatzhaus;' Miron 420, Ht. 4.0 cm. See chapters 1; 2.1; 3.

3 = Calcareous rock jars; Saqqara, SAE tomb 2322; MMA 12.181.100, .102, .108. See chapter 1.

4 = Gypsum rock jars; Saqqara, SAE tomb 2322; MMA 12.181.127-. 128. See chapter 1.



1



2



3



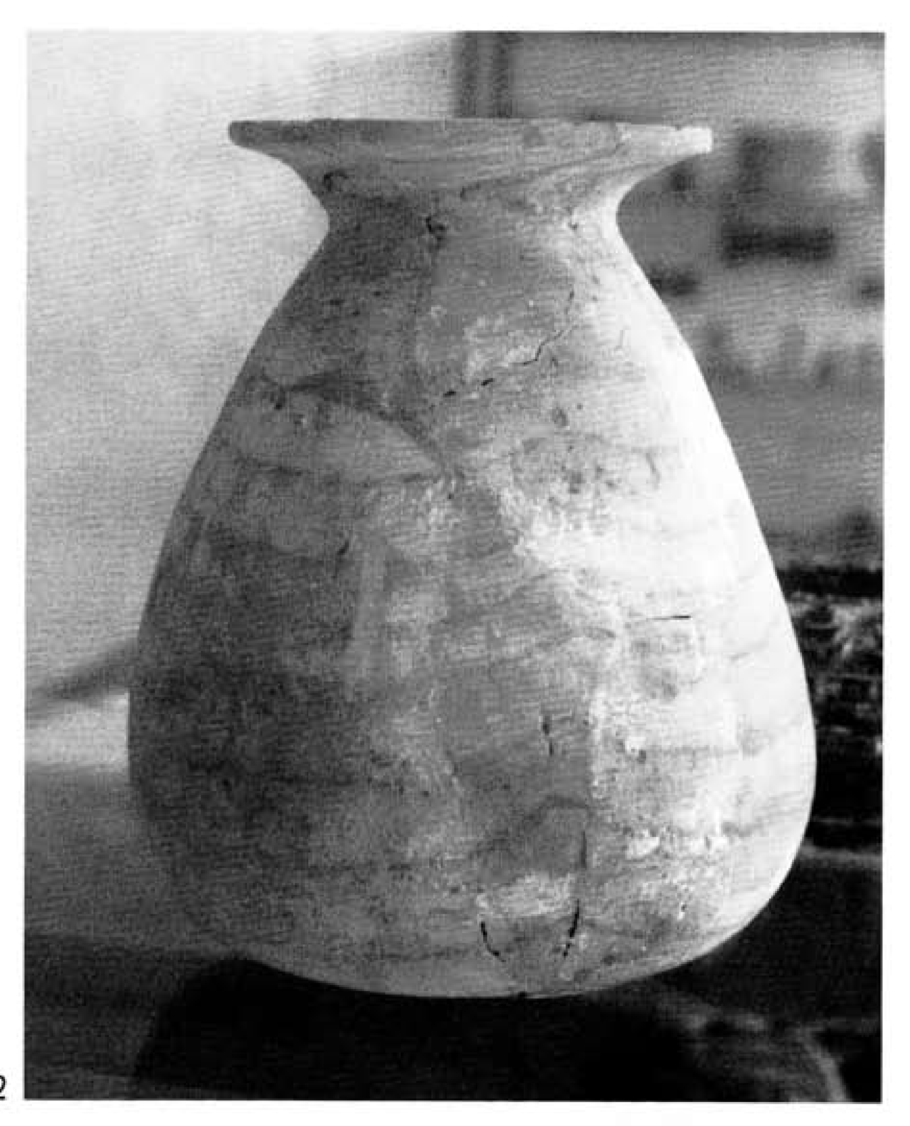
4

1 = Pyxis; Mochlos, tomb 7; Herakleion 1228 (Warren 1969: 45 type 20 B, 'Calcite, Early Minoan III – Middle Minoan I'). See chapter 1.

2 = Jar; Aghia Triadha, palace; Herakleion 343 (Warren 1969: 112 type 43 IA, 'Second Intermediate period or Dynasty 18 Egyptian alabastron'). See chapter 1.

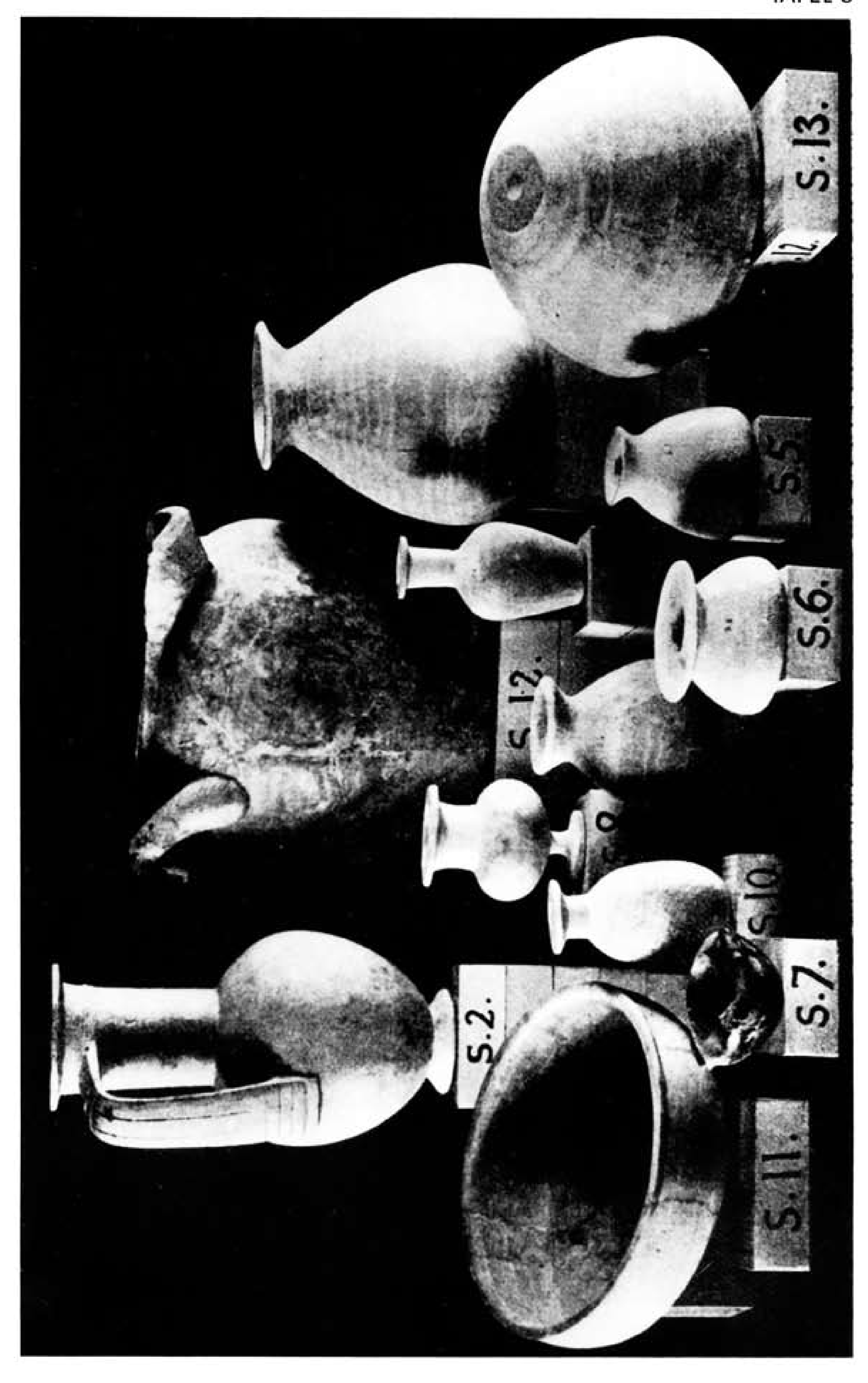


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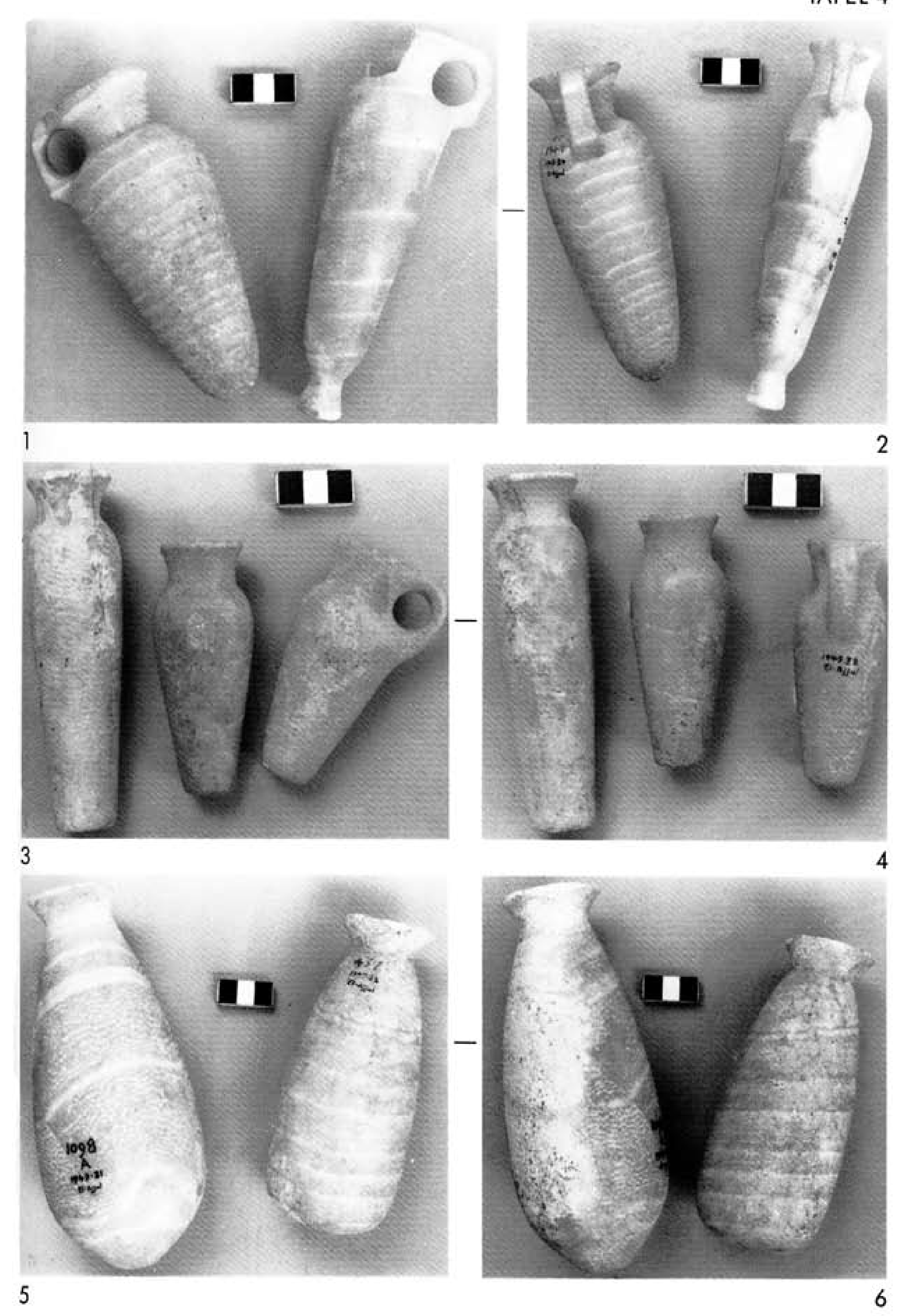
Vessels; Isopata, Royal Tomb; Herakleion; from Evans 1905: fig. 125; (Warren 1969: S12 ='banded tufa' [type 13b], all others exept S7 'Egyptian alabaster Egyptian vases'). See chapters 1; 4.


S.2.
S.11.
S.7.
S.12.
S.6.
S.5
S.13.

1-2 = Knob and round-based juglets; Ajjūl, Pit F 844 and '552 H;' Ashmolean 1949.34-.35 (Petrie 1934: pl. 39,53). See chapters 2.1; 3.

3-4 = Shoulder jars and juglet; Ajjūl, '1092 D,' '150 C,' and '921'; Ashmolean 1949.36-.38. See chapters 2.1; 3.

5-6 = Ovoid jars; Ajjūl, '1098 A' and 'A 57;' Ashmolean 1949.31-32 (Petrie 1934: pl. 38,33). See chapters 2.1; 3.

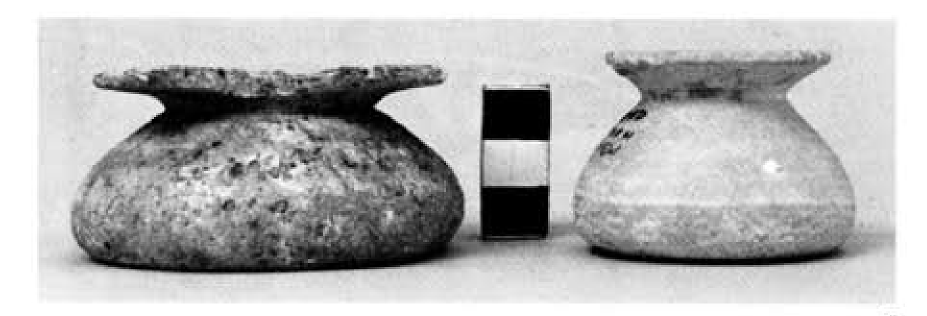


1 2 3 4 5 6

1 = Baggy jars; Ajjūl, '1750' and '1908 G;' Ashmolean 1949.43, .41 (Petrie 1934: pls. 22,242; 38,1. See chapters 2.1; 3.

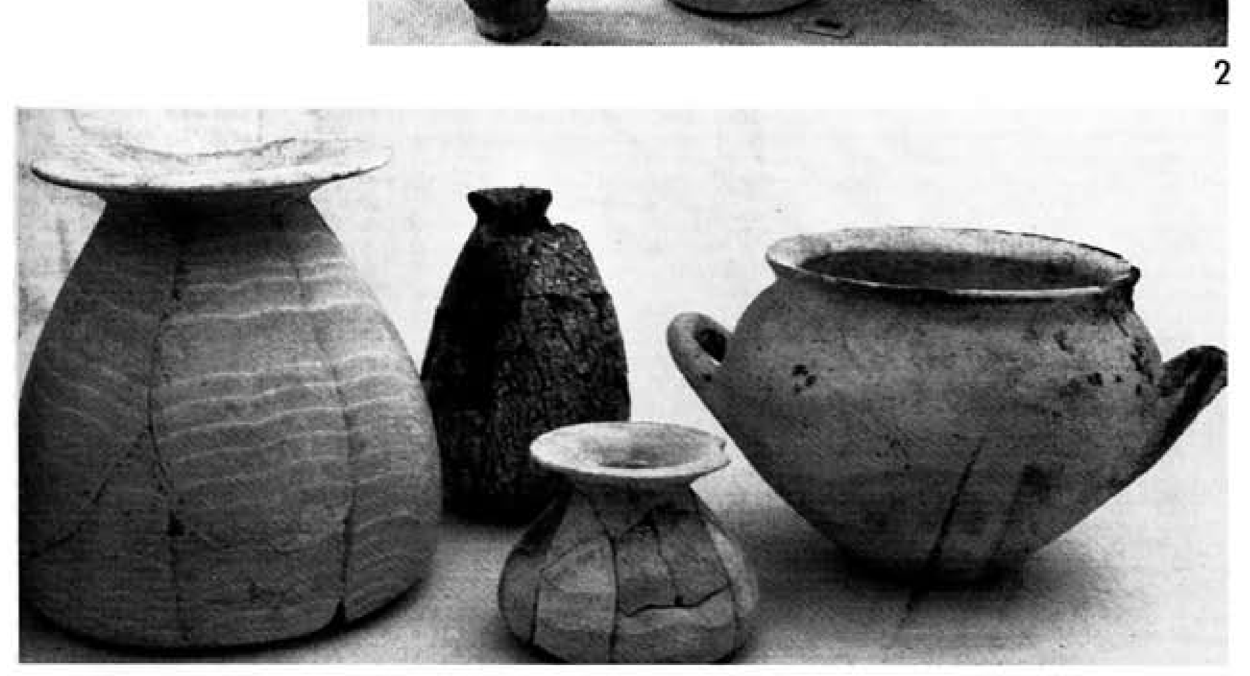
2 = Shoulder, baggy, and *koḥl* jars; Ajjūl 1933, Ee.770 no. 409 and area 'T.796' no. 449; Rockefeller 886-889 (Petrie 1934: pls. 38,29; 39,72). See chapters 2.1; 3.

3 = Baggy jars and krater; Ebla; from Scandone 1984: 68, (Scandone: 'Egyptian alabaster and workmanship'). See chapters 2.1; 2.2; 3.



1

2



3

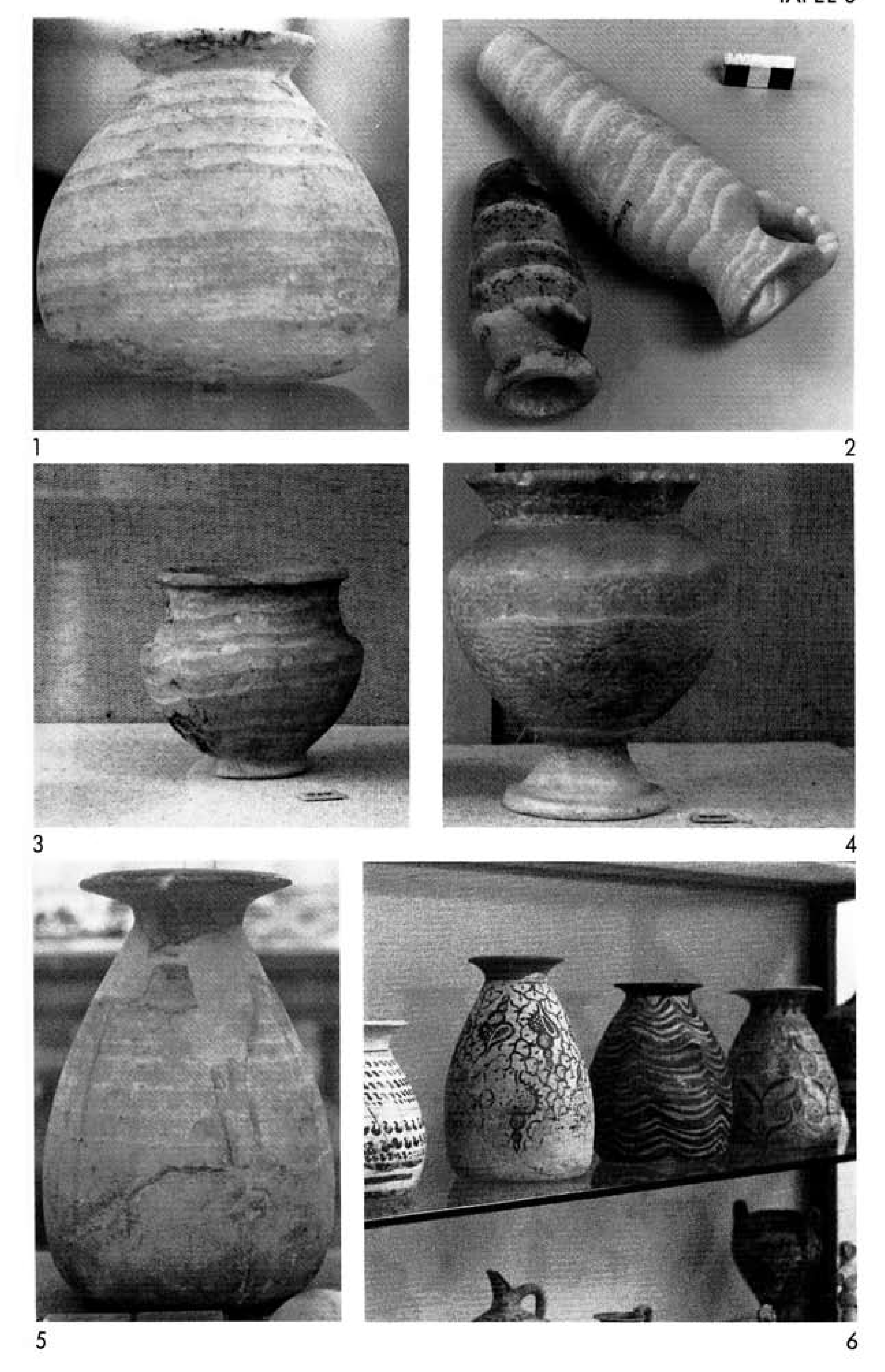
1 = Baggy jar; Vaphio, tholos; Athens NM 1890 (Warren 1969: 114 type 43 I, 'Second Intermediate period or Dynasty 18 Egyptian alabastron'). See chapter 2.2.

2 = Shoulder jar and juglet; Abydos, E 10 and E 187; Ashmolean E 2321 and E 2345 (Garstang 1901: 12, 45, 144 pls. 29; 35,16-18). See chapter 2.1.

3-4 = Wide-necked jars with flat and trumpet bases; Ajjūl 1933, T. 1717 nos. 199v and 199w; Rockefeller 959-960 (Petrie 1934: 12 pl. 38). See chapter 2.1.

5 = Baggy jar; Mycenae; Athens NM 6251 (Warren 1969: 114 type 43 I, 'Second Intermediate period or Dynasty 18 Egyptian alabastron'). See chapter 2.2.

6 = Late Minoan pottery alabastra; Herakleion. See chapter 2.2.



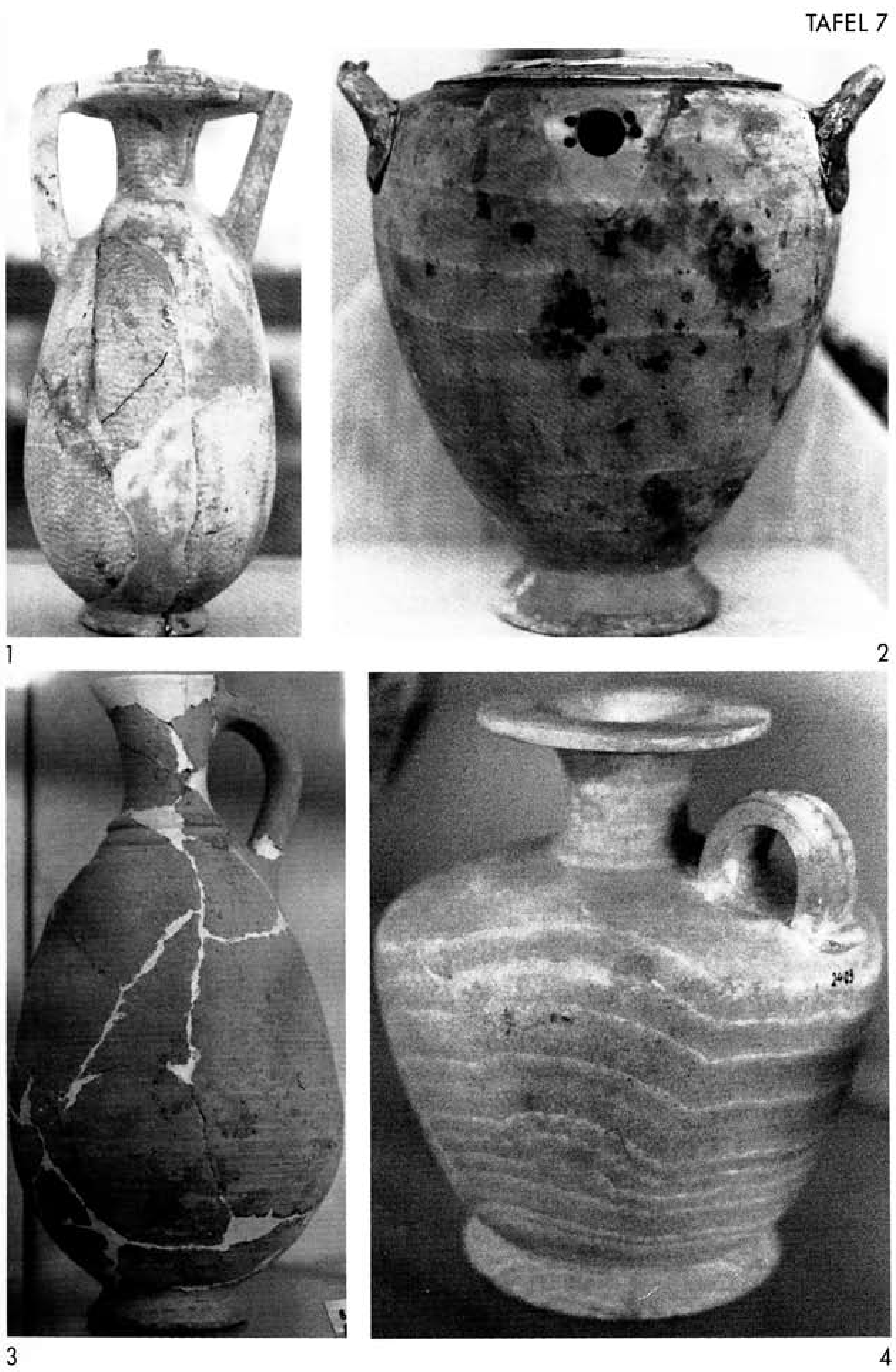
1 2 3 4 5 6

1 = Ewer; Mycenae, chamber tombs; Athens NM 3225 (Warren 1969: 104 type 42 B, 'Egyptian alabaster, Minoan made'). See chapters 2.2; 3.

2 = Jar with gold fittings; Mycenae, shaft grave 5; Athens NM 829 (Warren 1969: 104 type 42 B, 'Dynasty 18 Egyptian alabastron'). See chapter 2.2.

3 = Pottery ewer; Jericho 1933, room 18 no. 48; Rockefeller 843. See chapter 2.2.

4 = Jug; Knossos, tomb near the Temple Tomb; Herakleion 2403 (Warren 1969: 113 type 43 J, 'Egyptian alabaster; Syro-Palestinian manufacture or Egyptian manufacture from Syro-Palestinian shape'). See chapters 2.2; 3.

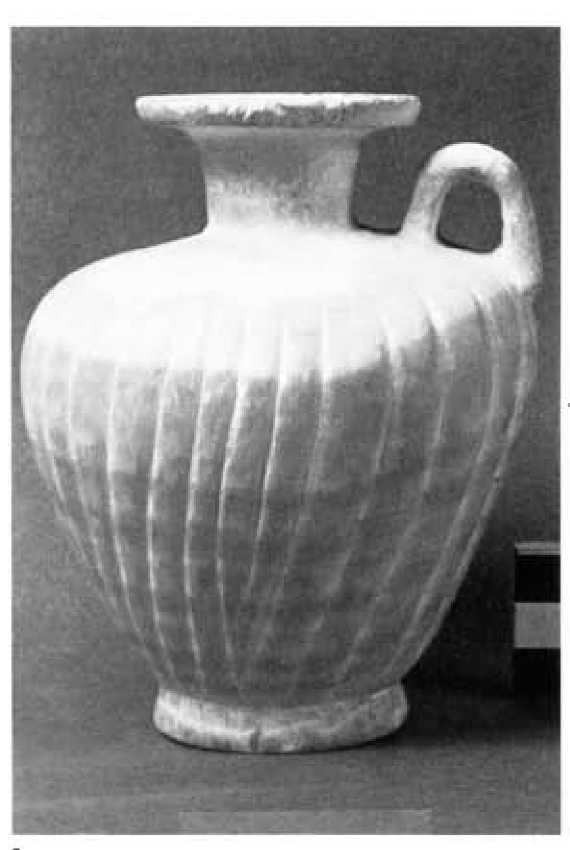


1 2 3 4

1-2 = Jug; Megiddo, T 5013 J; Oriental Institute A 23792. See chapter 2.2.

3 = Detail of vessel in Plate 25,4; Knossos, Central Treasury; Herakleion 47 (Warren 1969: 112 type 43 I, 'Second Intermediate period or Dynasty 18 Egyptian alabastron'). See chapter 2.2.

4 = Pitcher; Mycenae, shaft grave 4; Athens NM 592 (Warren 1969: 48 type 22 D, 'Egyptian alabaster, Minoan made'). See chapters 2.2; 3.

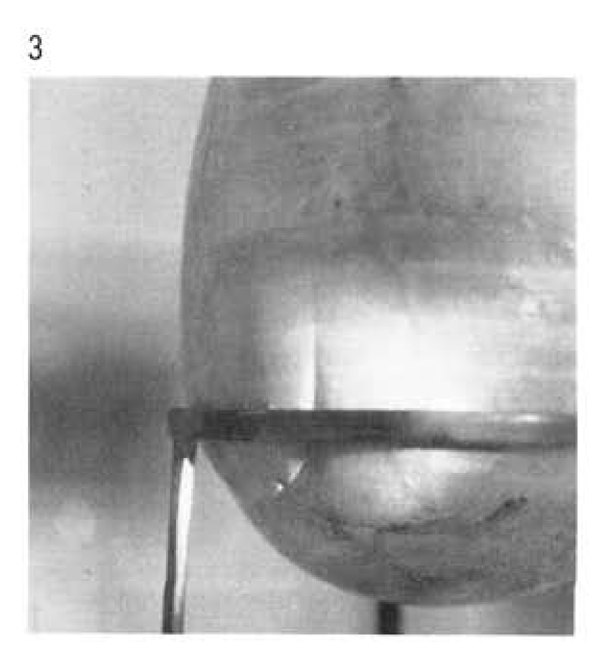


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4



1 = Jar (?); central Crete; Ashmolean AE 384 (Warren 1969: 110 type 42 B3, 'material does not seem to be Cretan...may well be Egyptian, the base probably carved by Minoans'). See chapters 2.2; 2.4.

2 = Ewer; Mycenae, chamber tomb 102; Athens NM 4920 (Warren 1969: 43f. type 19 B, 'Egyptian alabaster, Minoan shape'). See chapter 2.2.

3 = 'Rhyton;' Zakro, Treasury; Herakleion 2749 (Warren 1969: 88 type 34 B2, 'Egyptian alabaster, Minoan shape'). See chapters 2.2; 4.

4 = Flask; Zakro, Treasury; Herakleion 2728 (Warren 1969: 103 type 42 B, 'Egyptian alabaster, Minoan shape'). See chapters 2.2; 4.

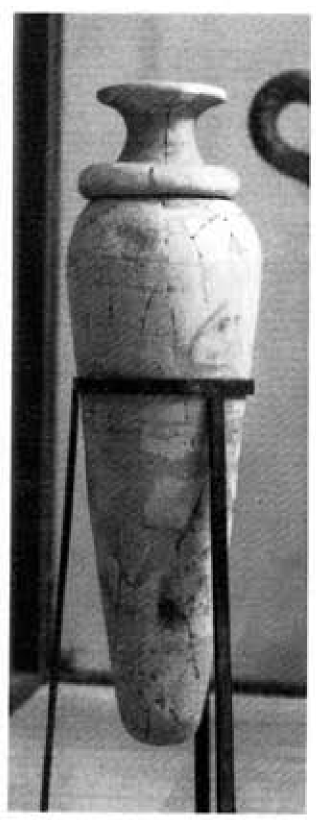
5 = Ewer; Zakro, Treasury; Herakleion 2718 (Warren 1969: 44 type 19 B, 'Egyptian alabaster, Minoan shape'). See chapters 2.2; 4.



1



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4



5

1 = Jar; Pinies, near Elunda; Ashmolean AE 204 (Warren 1969: 74 type 30 A, 'gabbro immitation of an Egyptian vase, probably Middle Minoan III – Late Minoan IIIA1'). See chapter 2.3.

2 = Spouted jar; Mycenae, tomb 76; Athens NM 3050 (Warren 1969: 34 type 13 B, 'gabbro, Minoan made'). See chapter 2.3.

3 = Detail of krater in Plate 5,3; Ebla, tomb of the princess; Aleppo Museum in 1989. See chapter 2.2.



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3

1 = Jar with upswung handles; Athens NM 2770. See chapter 2.3.

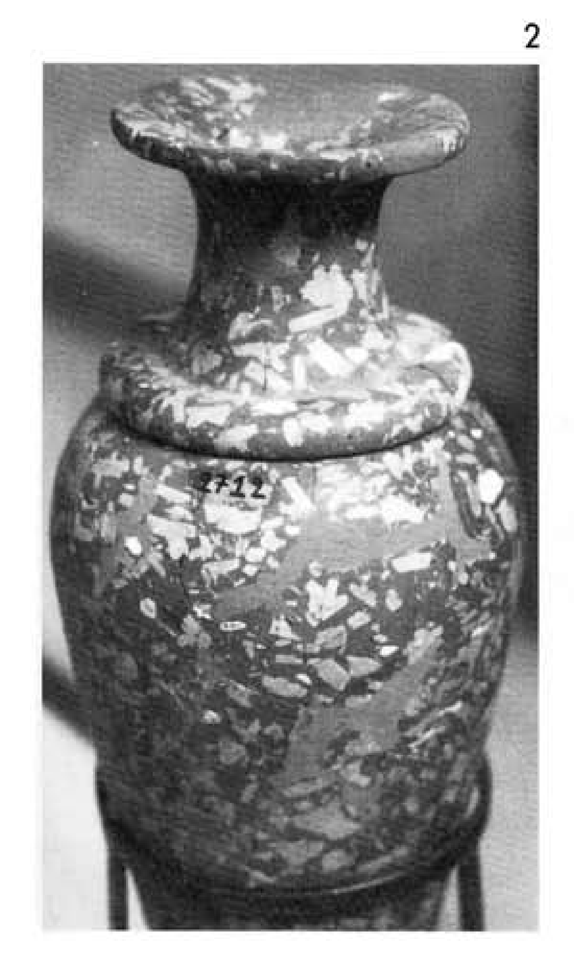
2 = 'Rhyton'; Zakro, Treasury; Herakleion 2712 (Warren 1969: 87 type 34 B1, '*lapis lacedaemonius*'). See chapter 2.3.

3 = Jar with spool neck; Athens NM. See chapter 2.3.

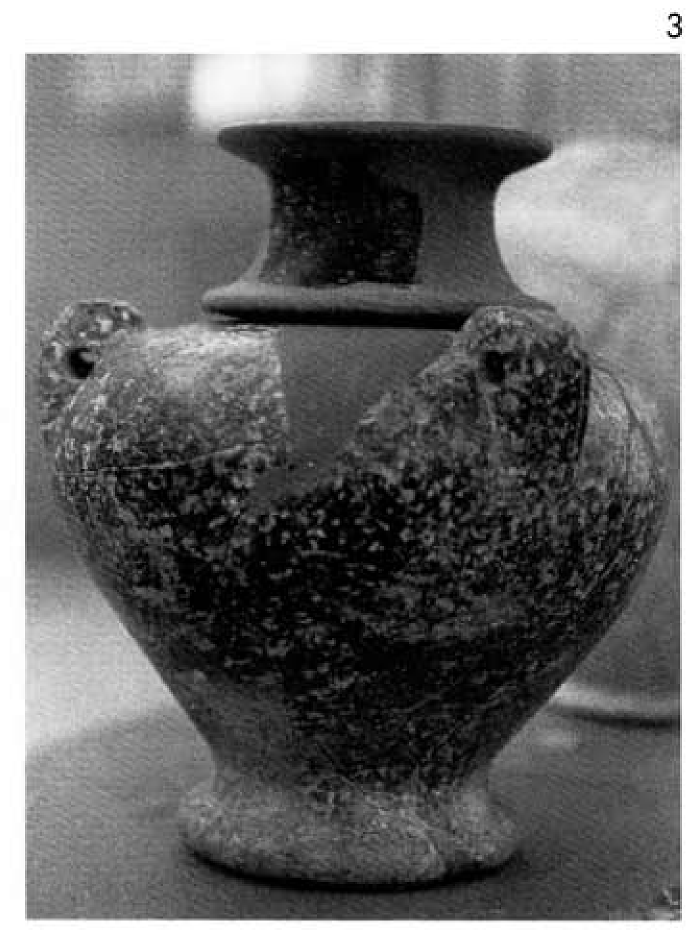
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2

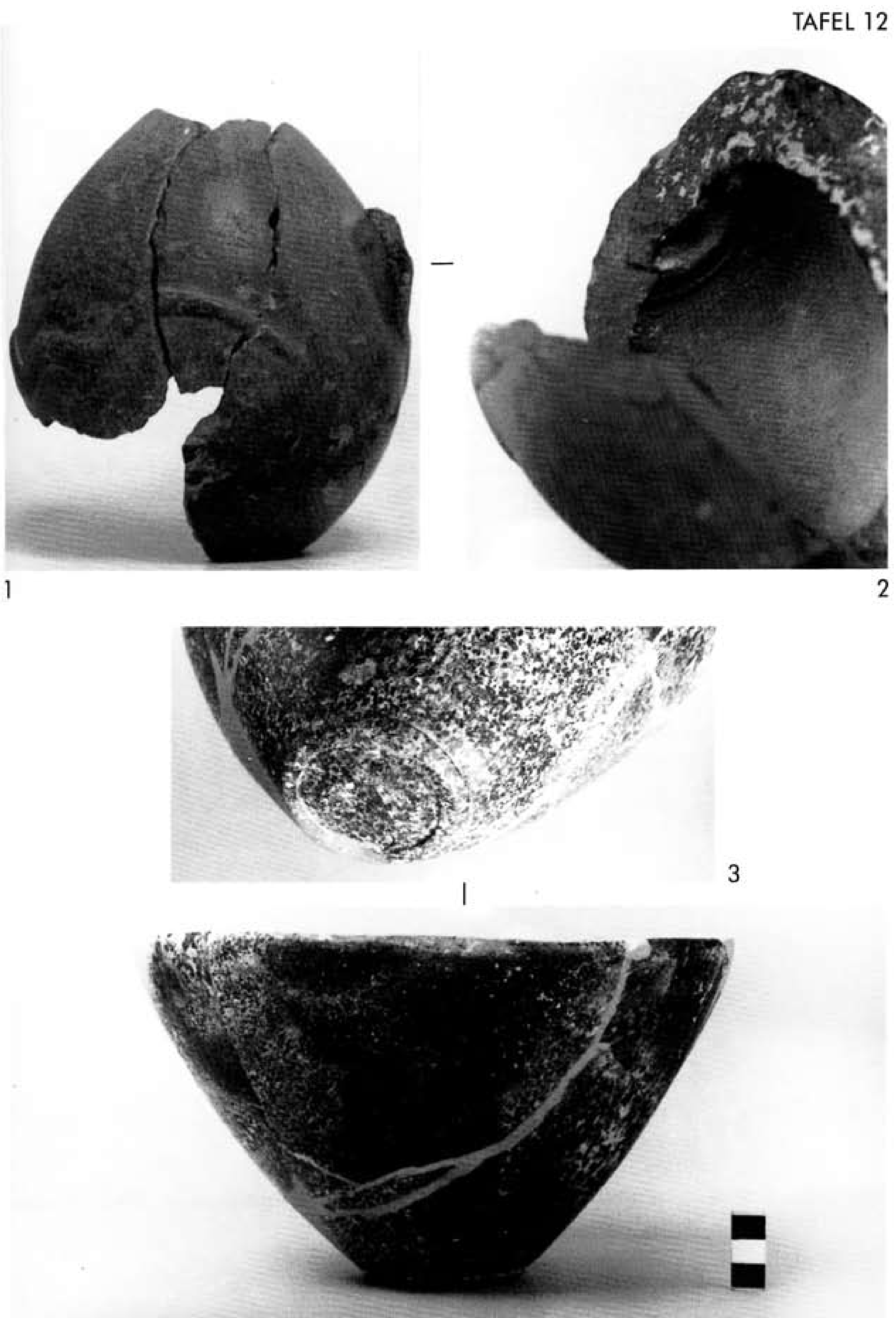


3



1-2 = Serpentinite jar with snake; Amman Airport; Amman 6276 (Hankey 1974: S50, 'origin unknown'). See chapter 2.3.

3-4 = Hard stone bowl with ring base; Meskéné/Emar; Louvre AO 26841. See chapter 2.3.



1 2

3

4

PLATE 13 (Lilyquist, Stone vessels)

1 = Diorite cup; al-Jesira; Aleppo 7692. See chapter 2.3.

2 = Diorite cup; Kerma, tumulus K X; MFA Boston 20.1157 (Reisner 1923: 'Egyptian'). See chapter 2.3.

3 = Serpentinite ointment jar with lid; Alalakh VII; British Museum WA 130643. See chapter 2.3.

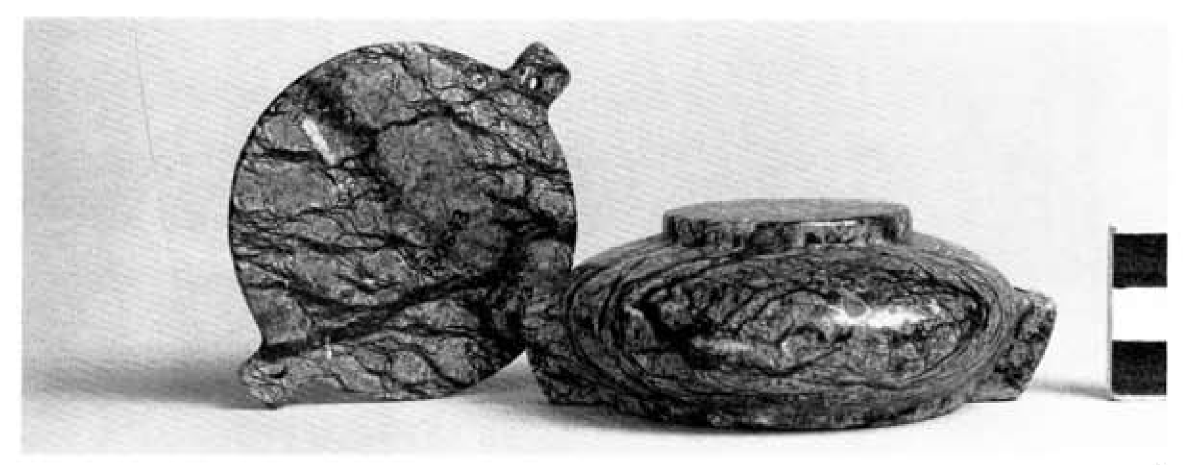
4 = Squat jar; Knossos, unstratified deposit northwest of the Palace; Ashmolean 1910.201 (Warren 1969: 109 type 42 A2, 'gabbro, Dynasty 2 Egyptian import'). See chapters 2.3; 2.4.



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2



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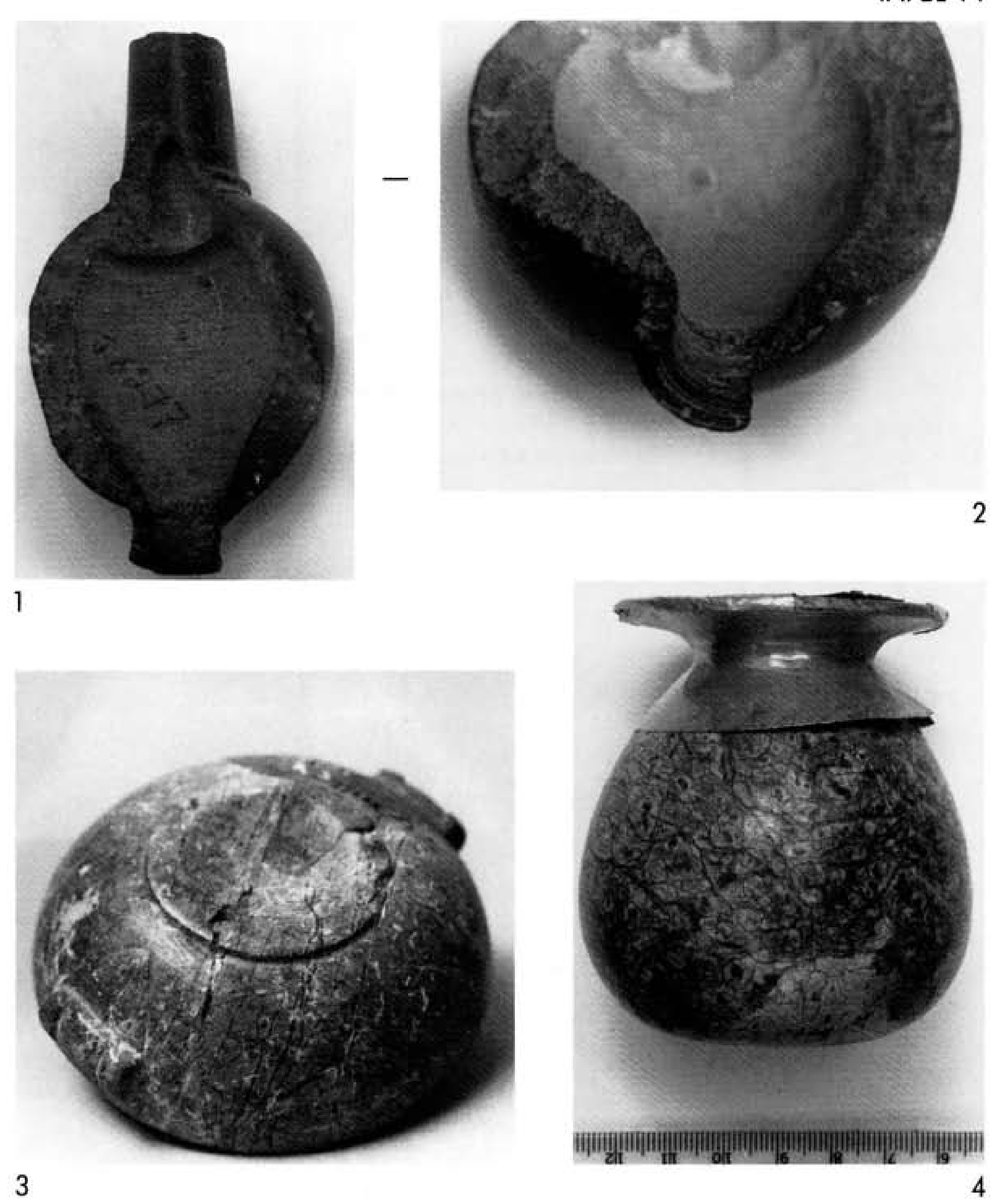


4

1-2 = Serpentinite vessel; Amman Airport; Amman 6277 (Hankey 1974: S27, 'Egyptian material and technology'). See chapters 2.3; 2.4.

3 = Serpentinite bowl; Ras Shamra; Louvre AO 17232 (Caubet 1991: 5.221). See chapter 2.3.

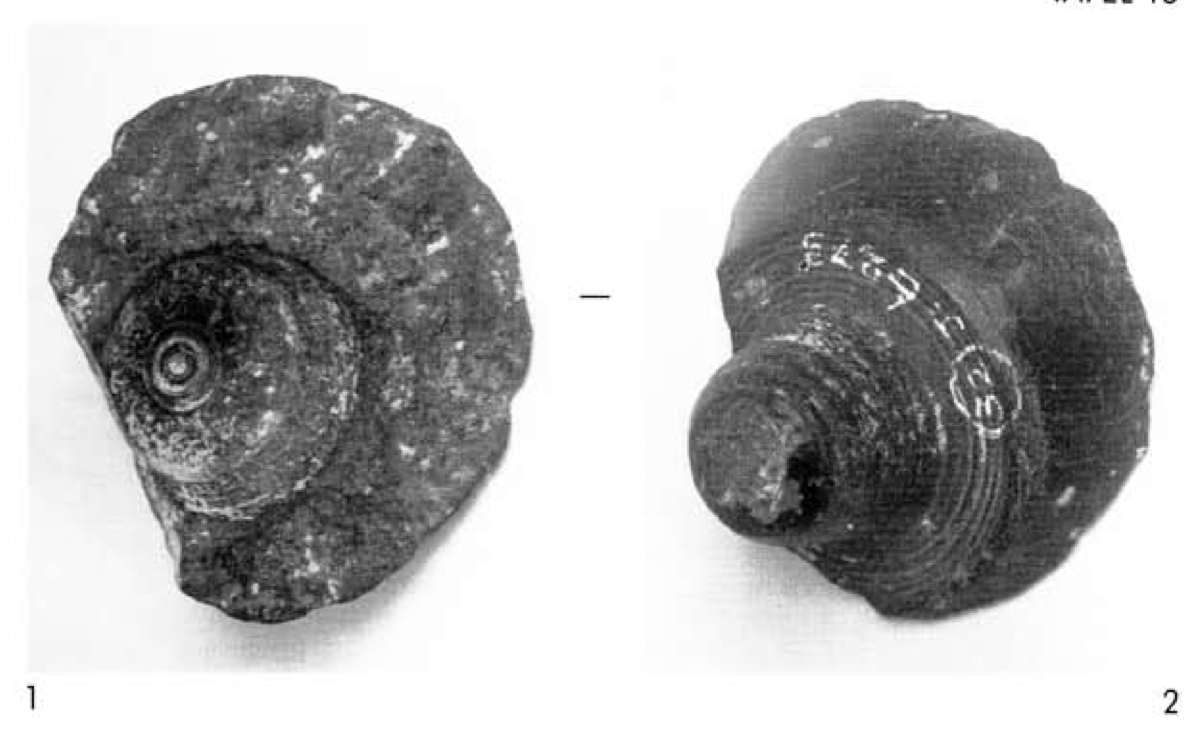
4 = Serpentinite jar with gold trim; Megiddo VIII, Hoard 3100; Rockefeller 38.1019, Ht. 7cm. See chapters 2.3; 3.



1 2 3 4

1-2 = Base of serpentinite vessel; Amman Airport; Amman 6273 (Hankey 1974: S7, 'Egyptian material, technology, and shape'). See chapters 2.3; 3; 4.

3-4 = Serpentinite bowl with disk base; Alalakh; British Museum WA 136678, Ht. 5cm. See chapters 2.3; 4.



1 2



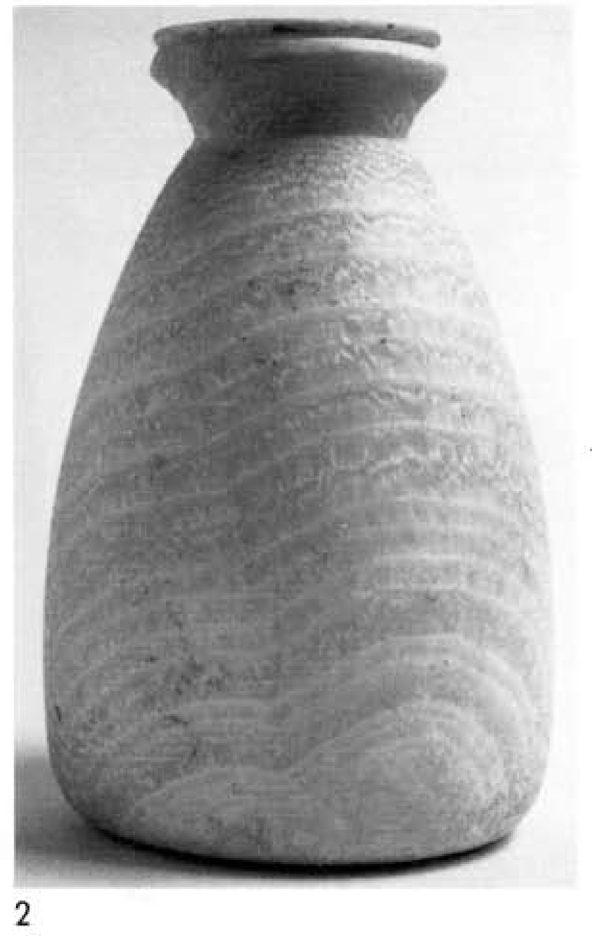
3 4

PLATE 16 (Lilyquist, Stone vessels)

1-3 = Calcareous flask, KL 78:500; Kāmid el-Lōz, 'Schatzhaus;' Miron 412, Ht. 18.3 cm. with lid. See chapter 3.



1



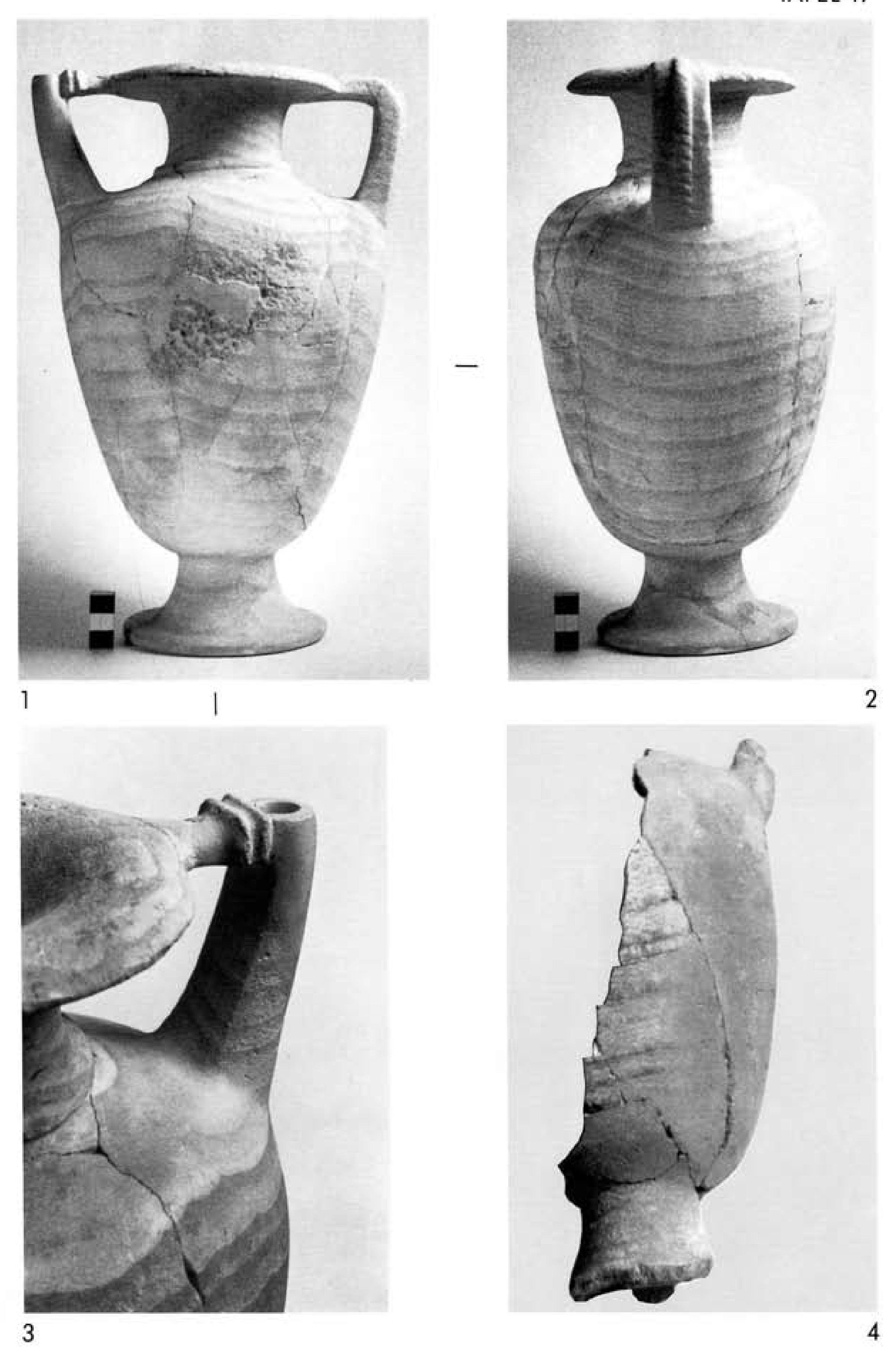
2



3

1-3 = Calcareous ewer, KL 78:582; Kāmid el-Lōz, 'Schatzhaus;' Miron 408, Ht. 32.6 cm. See chapters 2.2; 3.

4 = Ewer; Amman Airport; Amman 6269 (Hanky 1974: S6, 'material and method of drilling Egyptian'). See chapter 3.



1 2

3 4

1-2 = Calcareous footed cup, KL 78:580; Kāmid el-Lōz, 'Schatzhaus;' Miron 415, Ht. 10.8 cm. See chapter 3.

3 = Footed cup, wide-mouthed jar, baggy vase; Nubian Archaeological Survey; MFA Boston 96/102, 110/229, 110/77. See chapter 3.

4 = Juglet; Nubian Archaeological Survey; MFA Boston 7/5/31. See chapter 3.

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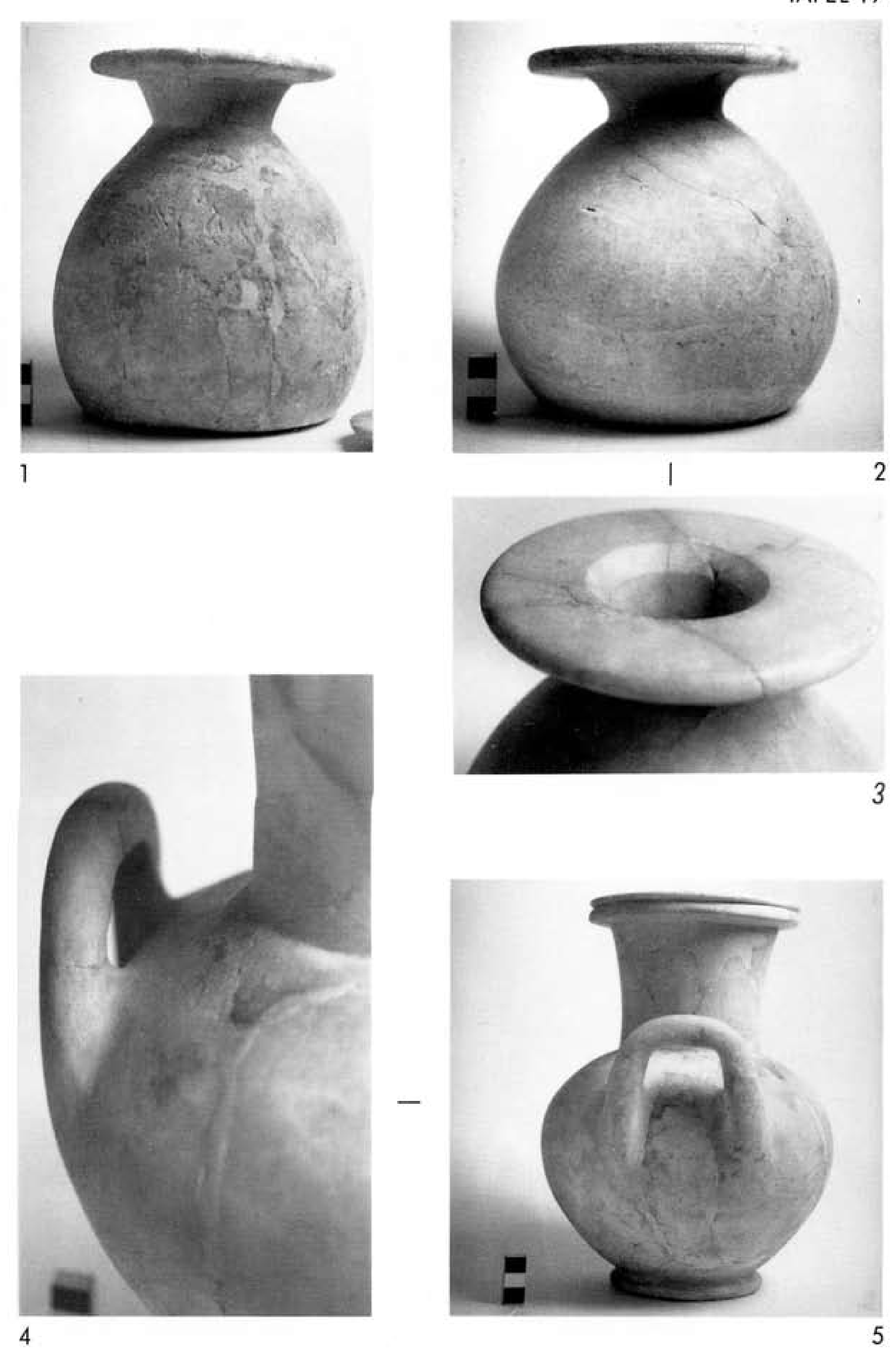
3



1 = Calcareous piriform jar, KL 78:578; Kāmid el-Lōz, 'Schatzhaus;' Miron 414, Ht. 18.2 cm. See chapter 3.

2-3 = Calcareous piriform jar, KL 78:579; Kāmid el-Lōz, 'Schatzhaus;' Miron 413, Ht. 18.2 cm. See chapter 2.1; 3.

4-5 = Calcareous amphora with horizontal loop handles, KL 78:581; Kāmid el-Lōz, 'Schatzhaus;' Miron 409, Ht. 27.3 cm. with lid. See chapter 3.



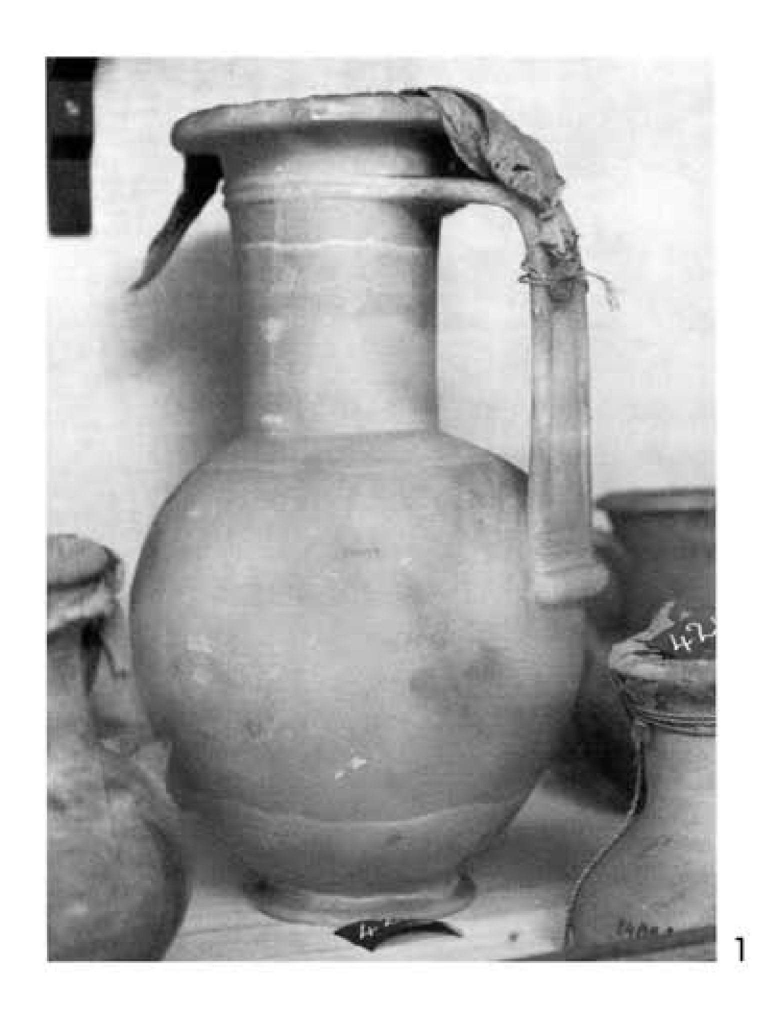
1 2

3

4 5

1 = Jug; VK 36, tomb of Maiherpri; Cairo CG 24008. See chapters 3; 4.

2-3 = Nummulitic limestone jug, KL 78:501; Kāmid el-Lōz, 'Schatzhaus;' Miron 410, Ht. 26.4 cm. See chapter 3.



1





2 3

1 = Serpentinite jug, KL 78:573; Kāmid el-Lōz, 'Schatzhaus;' Miron 404, Ht. 12.2 cm. with lid Miron 407. See chapter 3.

2 = Calcareous jug, KL 78:502; Kāmid el-Lōz, 'Schatzhaus;' Miron 411, Ht. 19.9 cm. See chapter 3.

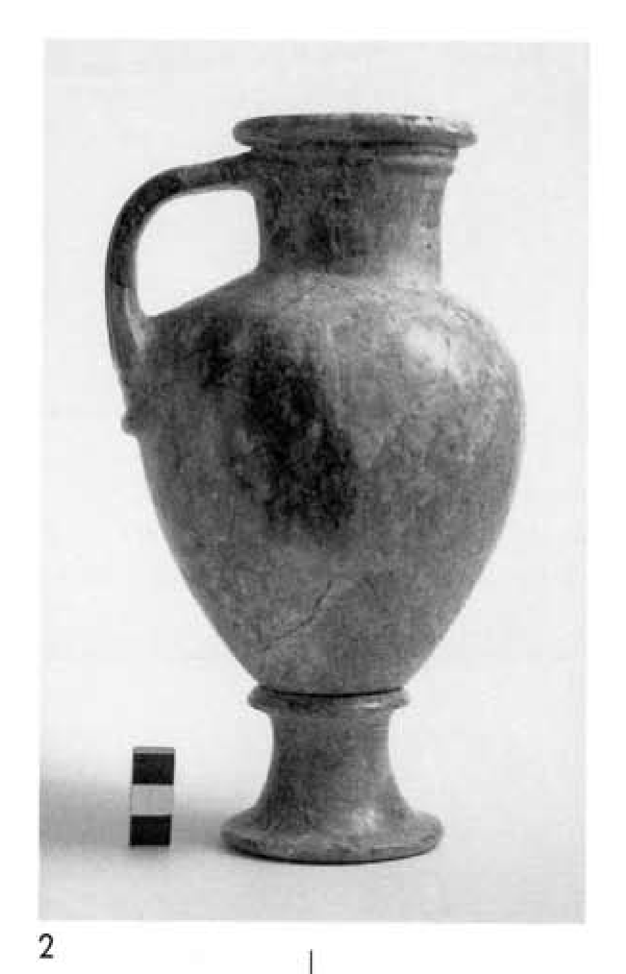


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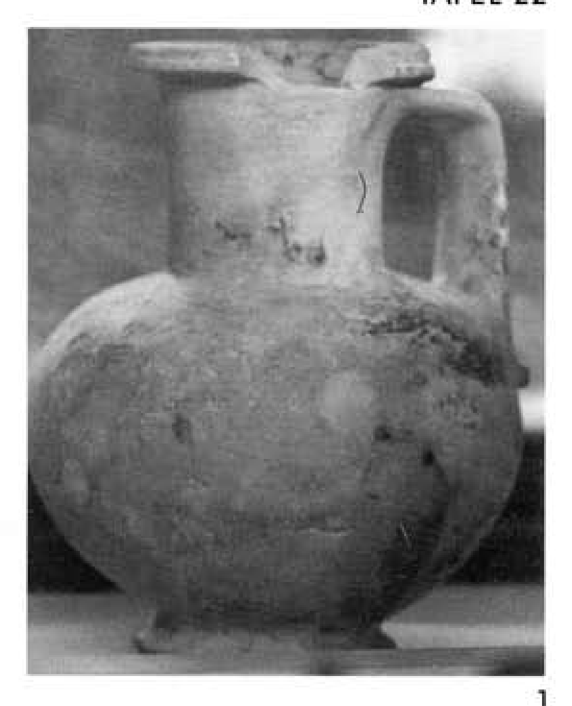
2

1 = Jug; Aniba, tomb SA 10; Cairo JdE 41831, Ht. 18.5cm. See chapter 3.

2-4 = Serpentinite jug and stand, KL 78:572; Kāmid el-Lōz, 'Schatzhaus;' Miron 403, Ht. 23.8 cm. with stand. See chapter 3, pl. 23,3-4.



2



1



3



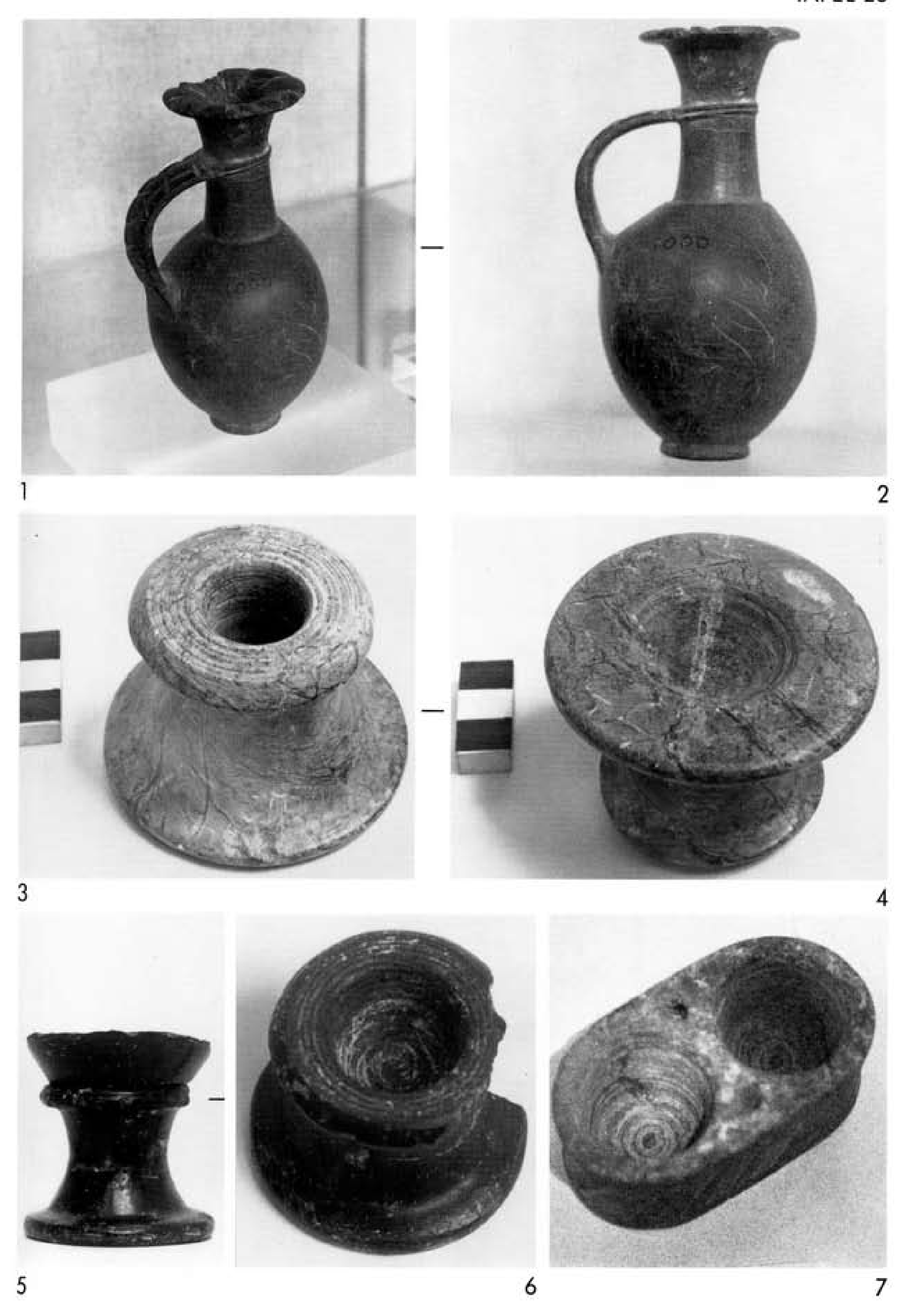
4

1-2 = Serpentinite juglet; Ajjūl, cemetery surface; Rockefeller 1103 (Petrie 1932: pls. 22; 23). See chapter 3.

3-4 = Serpentinite stand, KL 78:572; Kāmid el-Lōz, 'Schatzhaus;' Miron 403, Ht. 5.0 cm. See chapter 3

5-6 = Serpentinite stand (right) and bottom of vessel in it (left); Amman Airport; Amman 6273, 6275 (Hankey 1974: S7, 'Egyptian vessel'). See chapters 3; 4.

7 = Block vase; Platanos, tholos A; Herakleion 1632 (Warren 1969: 13 type 4 C, 'chlorite, Early Minoan III – Middle Minoan I'). See chapter 3.



1 2 3 4 5 6 7

1-3 = Serpentinite amphoriskos, KL 78:574; Kāmid el-Lōz, 'Schatzhaus,' Miron 405 and stand belonging to pitcher Miron 403, Ht. 21.5 cm. See chapter 3.

4-5 = Serpentinite amphoriskos with self-stand; Semna tomb/s 502; MFA Boston 24.951, Ht. 14 cm. See chapters 3; 4.

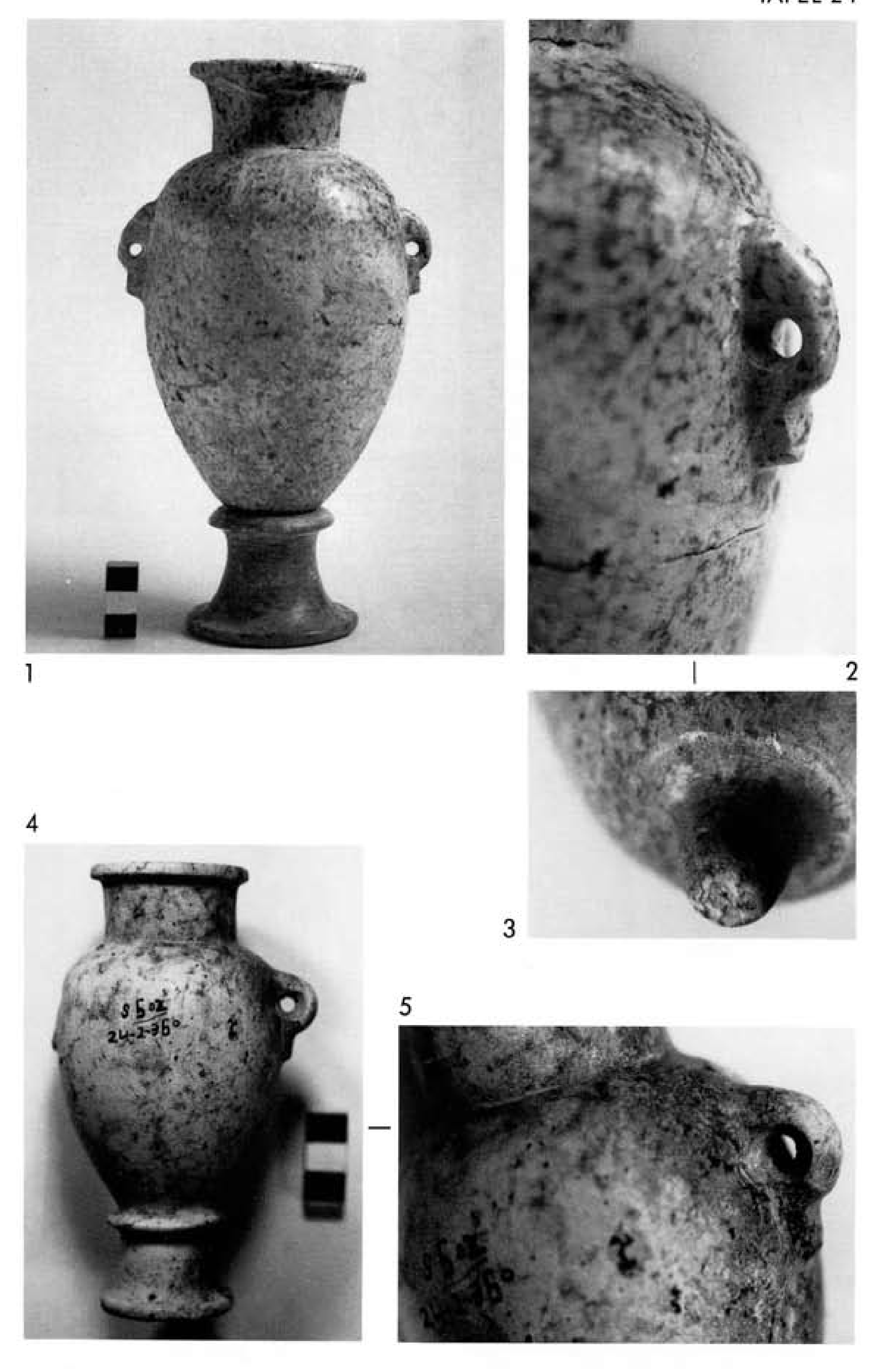
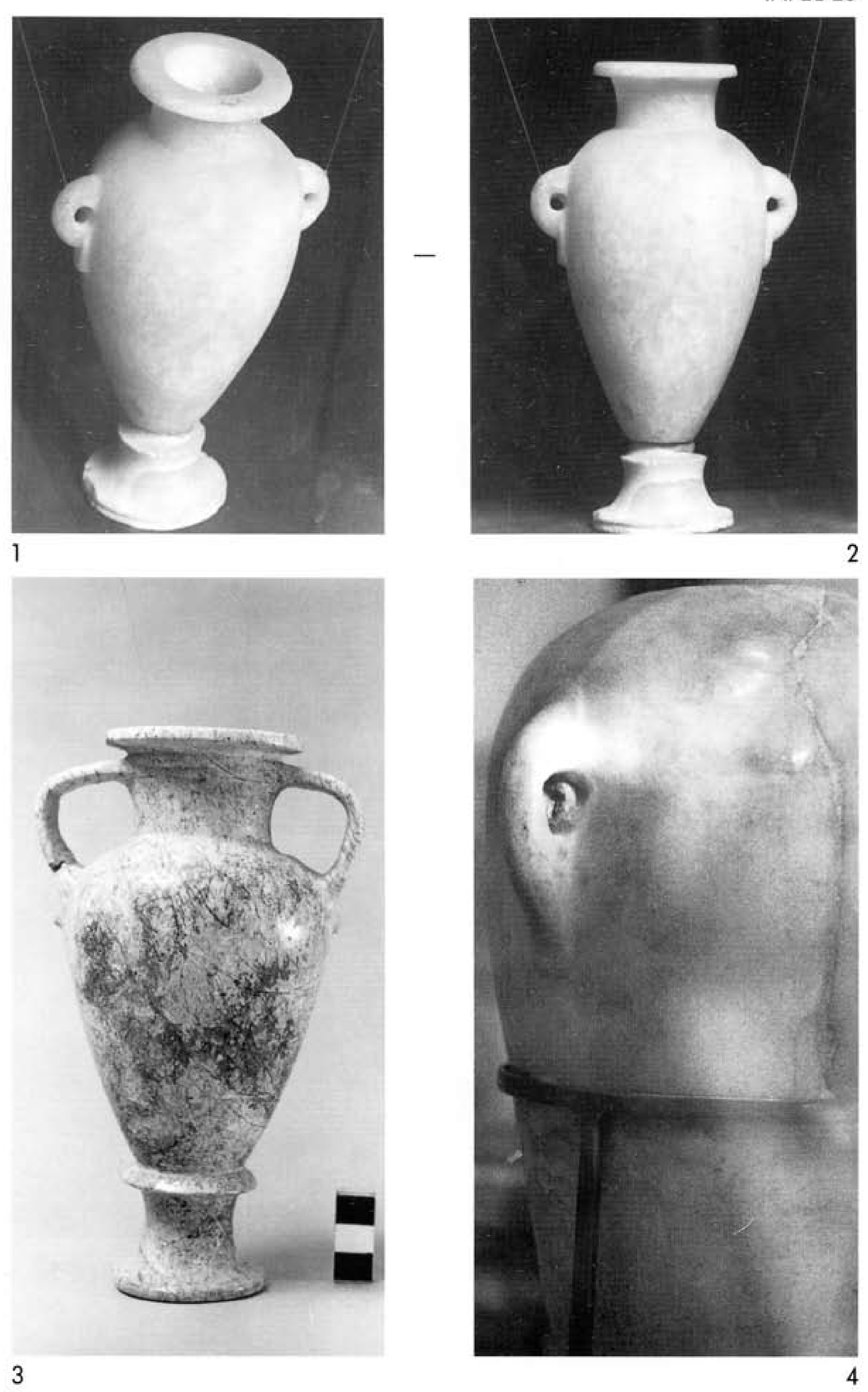


PLATE 25 (Lilyquist, Stone vessels)

1-2 = Amphoriskos; Ras Shamra; Damascus. See chapter 3.

3 = Serpentinite amphoriskos; Ras Shamra; Louvre AO 18570 (Caubet 1991: p. 225, 7.208). See chapter 3.

4 = Vessel; Knossos, Central Treasury; Herakleion 46, Ht. 24.2 cm. (Warren 1969: 113 type 43 J, 'Hyksos or Dynasty 18 vessel'). See chapters 2.2; 3; detail in pl. 8,3.



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3

4

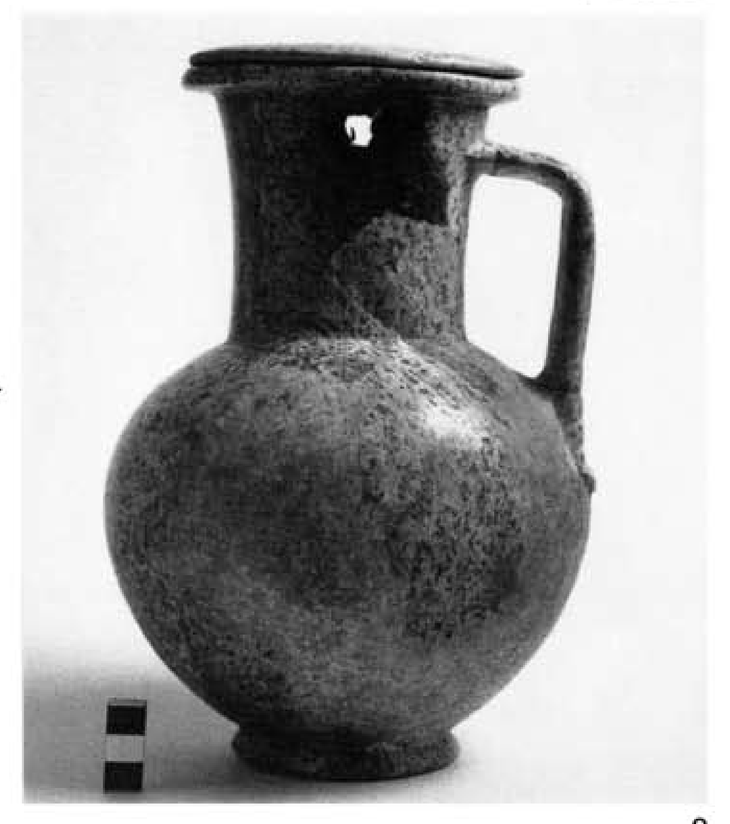
1-2 = Large serpentinite jug, KL 78:575; Kāmid el-Lōz, 'Schatzhaus;' Miron 402, Ht. 27.1 cm. with lid. See chapter 3.

3 = Serpentinite amphora; Saqqara; Cairo JdE 33189. See chapter 3.

4 = Serpentinite jug; Saqqara, tomb of Aper-el; (photo courtesy A. Zivie). See chapter 3.



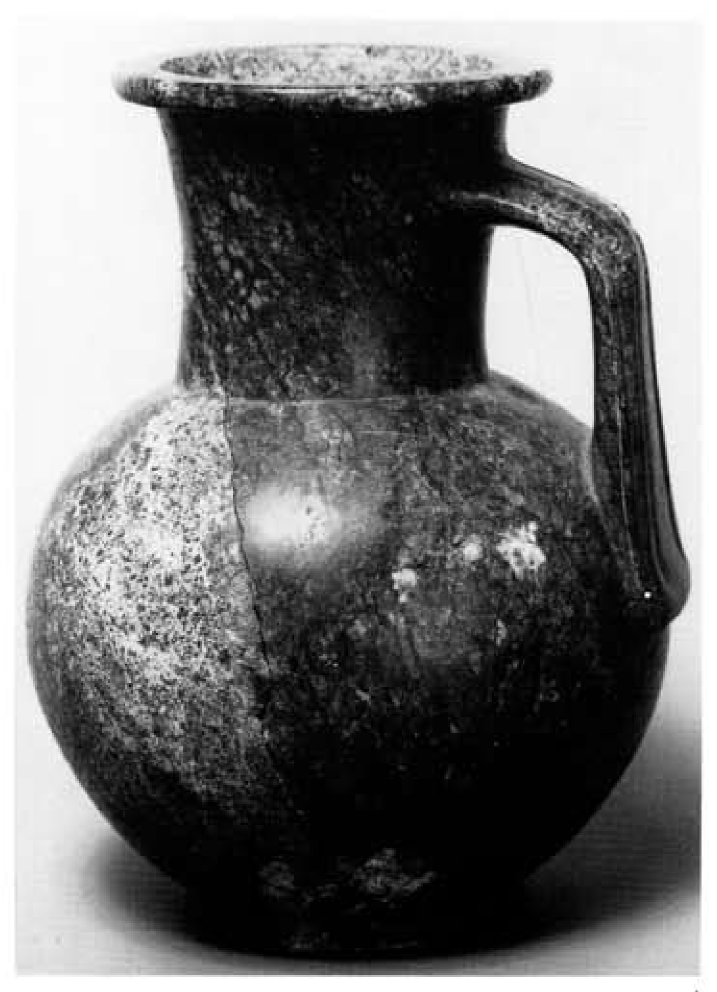
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2



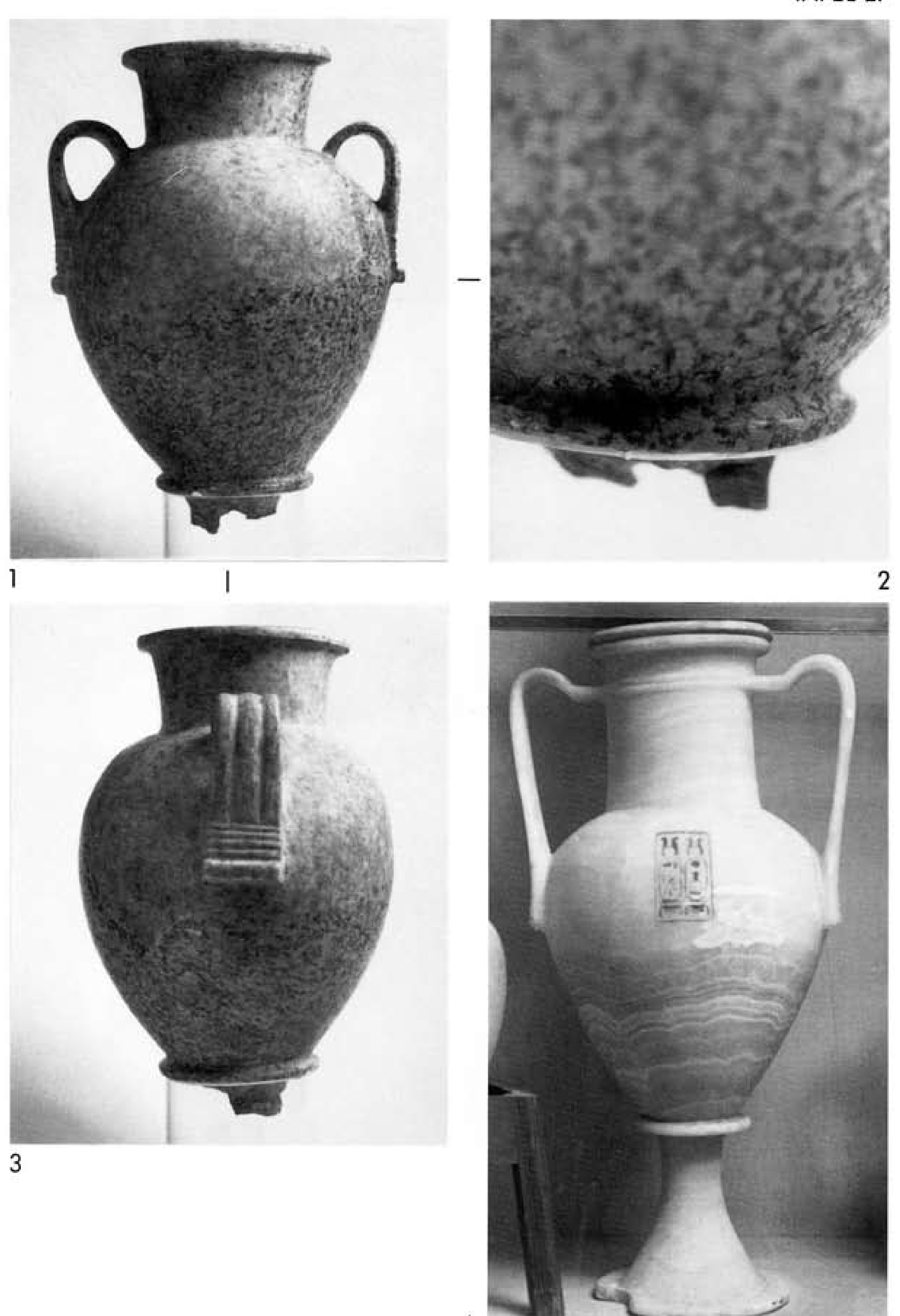
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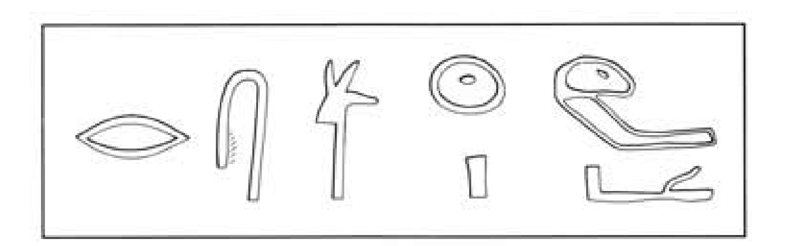
1-3 = Large serpentinite amphora with self-stand, KL 78:571; Kāmid el-Lōz, 'Schatzhaus;' Miron 406, preserved Ht. 28.7 cm. See chapter 3; F. Rost, Kāmid el-Lōz 16, 301-303.

4 = Amphora with separate stand; VK 62, tomb of Tutankhamun; Cairo JdE 62132. See chapter 3.



1 2 3 4

1-3 = Inscribed diorite jar, KL 78:507; Kāmid el-Lōz, 'Schatzhaus;' Miron 398, Ht. 15.9 cm. See chapter 3.
Below = Inscription of Miron 398: *ḥ3ty-ʿ rʿ-wsír*, drawn from a photograph.





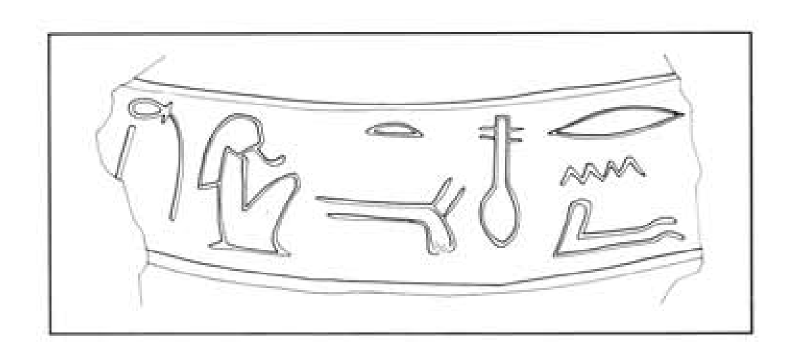
1

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1-2 = Fragment of porphyritic rock jar, inscribed, KL 80:10; Kāmid el-Lōz. See chapter 3.

Below = Inscribed band on fragment KL 80:10, drawn from a photograph. M 1:1.





1

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2